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Hard Red Spring Wheat Quality Report

Physical, Chemical, Milling, and Baking Characteristics



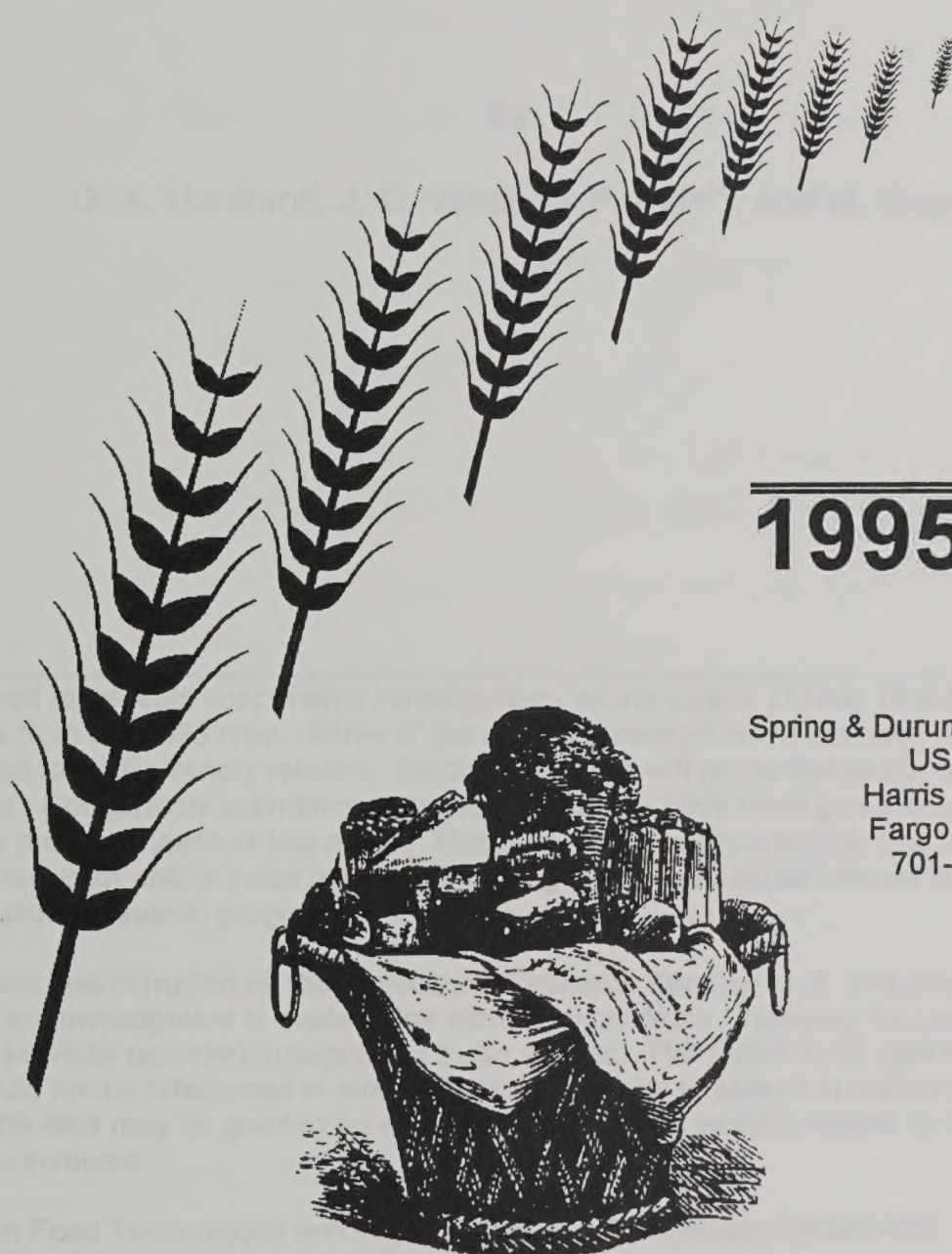
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1995 Crop

United States Department of Agriculture
Agriculture Research Service
RRVARC, Fargo, North Dakota

Hard Red Spring Wheat Quality Report

Physical, Chemical, Milling, and Baking Characteristics



1995 Crop

Spring & Durum Wheat Quality Lab
USDA/ARS
Harris Hall, NDSU
Fargo, ND 58105
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United States Department of Agriculture
Agriculture Research Service
RRVARC, Fargo, North Dakota

- not for publicaiton -

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
in cooperation with
STATE AGRICULTURAL EXPERIMENT STATION

QUALITY EVALUATION OF HARD RED SPRING WHEAT CULTIVARS

1995 CROP^{1/}

by

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1/ This report represents cooperative investigations on the quality of Hard Red Spring Wheat cultivars from the 1995 crop. Some of the results presented have not been sufficiently confirmed to justify variety release. Confirmed results will be published through established channels. Cooperators submitting samples for analysis have been given analytical data on their samples prior to release of this report. This report is primarily a tool for use by cooperators and their official staff and to those individuals having direct and special interest in the development of agricultural research programs.

This report was compiled by the Agricultural Research Service, U. S. Department of Agriculture. Special acknowledgment is made to the North Dakota State University for use of their facilities and the services provided in support of these studies. The report is not intended for publication and should not be referenced in either literature citations or quoted in publicity and advertising. Use of the data may be granted for certain purposes upon written request to the agency or agencies involved.

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1995 COOPERATING AGENCIES AND STATIONS

The cooperative agencies and stations conducting the varietal plot and nursery experiments from which the 1995 spring wheat samples were received are listed below:

Idaho Agricultural Experiment Station

Aberdeen, Teton

Minnesota Agricultural Experiment Station

Crookston, Morris, St. Paul

Montana Agricultural Experiment Station

Bozeman, Havre, Sidney

North Dakota Agricultural Experiment Station

Carrington, Dickinson, Langdon,
Minot, Prosper, Williston

South Dakota Agricultural Experiment Station

Brookings, Groton, Selby

Washington Agricultural Experiment Station

Pullman

Wyoming Agricultural Experiment Station

Powell

A complete list of all cooperating agencies, stations, and personnel for the year will be found in the report by R. H. Busch, et al., *Wheat Varieties Grown in Cooperative Plot and Nursery Experiments in the Spring Wheat Region in 1995*.^{4/}

^{4/} Busch, R. H. *Wheat Varieties Grown in Cooperative Plot and Nursery Experiments in the Spring Wheat Region in 1995*. Agricultural Research Service, U. S. Department of Agriculture and State Agricultural Experiment Station, St. Paul, MN.

INTRODUCTION

Samples of standard cultivars and new selections of hard red spring wheat grown in cooperative experiments in spring wheat regions of the United States are milled each year by the USDA/ARS, Wheat Quality Laboratory. Wheat and their corresponding flours are evaluated for physical and chemical properties, and the flours are baked to determine bread characteristics. The purpose of this report is to make available to the cooperators and other interested parties, quality data on the standard varieties and new selections of hard red spring wheat from the 1995 crop.

The evaluation of a wheat sample involves the analysis of kernel characteristics, milling performance, and baking performance. A brief description of testing methods employed is shown on pages 9-12. No specific comments are made regarding mixogram patterns derived from samples. However, reference mixograms, shown on page 17, illustrate ranges from which sample mixograms may be compared.

SOURCE OF THE 1995 CROP SAMPLES

Tests were performed on 1278 samples which were received from 21 stations in 8 states. However, data on 678 samples is excluded from this report, because the information was of interest only to plant breeders at specific experiment stations.

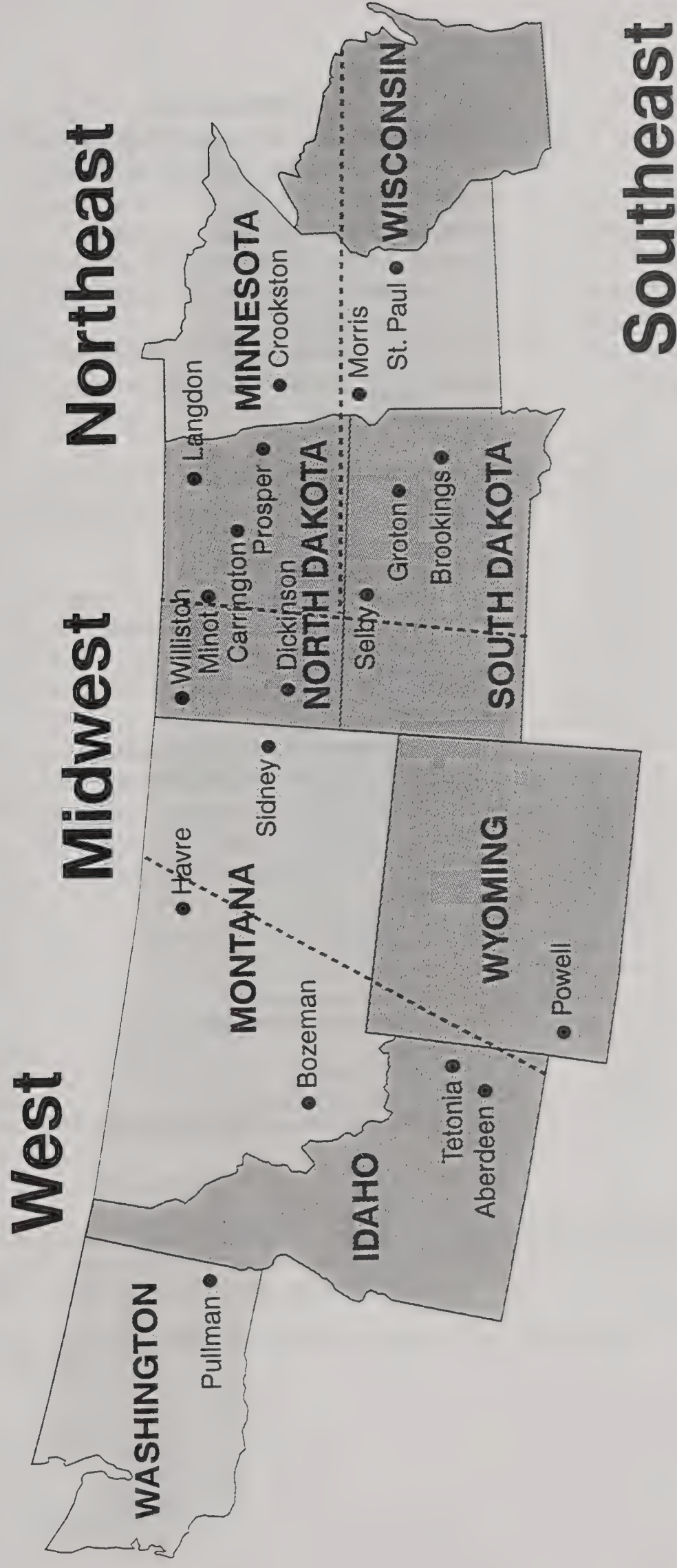
Data presented in this report represents the evaluation of spring wheat received from Field Plot Nurseries and Uniform Regional Nurseries. The following stations were cooperators:

| | |
|---------------|--|
| Idaho: | Aberdeen, Teton |
| Minnesota: | Crookston, Morris, St. Paul |
| Montana: | Bozeman, Havre, Sidney |
| North Dakota: | Carrington, Dickinson, Langdon, Minot, Prosper, Williston |
| South Dakota: | Brookings, Groton, Selby |
| Washington: | Pullman |
| Wyoming: | Powell |

UNIFORM REGIONAL NURSERY TRIALS

The geographical areas from which the samples were received are shown on page 7. Spring wheat cultivars and experimental lines included in the Uniform Regional Nursery trials are listed on page 8. The Northeast area included 5 stations; the Southeast area included 5 stations; the Midwest area included 4 stations; and the West area included 5 stations.

Hard Red Spring Wheat Nurseries



ENTRIES IN THE UNIFORM REGIONAL HARD RED SPRING WHEAT PERFORMANCE NURSERY

The 32 entries in the 1995 URHRSWPN are listed below:

| Entry No. | Cross or Variety | CI No. or Selection No. | Year Entered | Source |
|-----------|------------------|---|--------------|--------|
| 1. | Marquis | 3561 | 1929 | Canada |
| 2. | Chris | 13751 | 1969 | MN |
| 3. | Era | 13986 | 1972 | MN |
| 4. | Stoa | | 1987 | ND |
| 5. | Butte 86 | | 1987 | ND |
| 6. | SD3151 | SD3036//SD8052/SD297 | 1994 | SD |
| 7. | SD3156 | Butte 86/SD8061 | 1994 | SD |
| 8. | SD3164 | Butte 86/3/Mex Dwarf/Baca/Vona/4/2375 | 1995 | SD |
| 9. | SD8089 | SD8056/SD8061//SD3051 | 1995 | SD |
| 10. | SD8088 | SD8056/SD8061//SD3051 | 1995 | SD |
| 11. | SD3165 | Butte 86/3/Mex Dwarf/Baca/Vona/4/2375 | 1995 | SD |
| 12. | SD3161 | Grandin/3/SD2990-1//F134-71/NAC | 1995 | SD |
| 13. | MN91309 | SBII0037 | 1994 | MN |
| 14. | MN91324 | SBI0072 | 1994 | MN |
| 15. | SBE0050 | W8814/Norak | 1994 | MN |
| 16. | MN92387 | MN88064/Prospect | 1995 | MN |
| 17. | ND678 | Stoa's/3//IASS20*4/H567.71//Amidon | 1994 | ND |
| 18. | ND688 | Stoa's/3//IASS20*4/H567.71//Amidon | 1995 | ND |
| 19. | SBF0402 | Erik/SBY0430A | 1995 | NDRF |
| 20. | MT9354 | MT7810//SU73/Lew | 1995 | MT |
| 21. | MT9360 | Lew/Pondera | 1995 | MT |
| 22. | N89-0562 | Cno's/7C/3/BRE//BPT//ANB | 1994 | AGRIP |
| 23. | N92-2031 | Random Mating | 1995 | AGRIP |
| 24. | N92-0248 | N87-0135/HS85-0793 | 1995 | AGRIP |
| 25. | N92-0434 | Dalen/HS85-0476 | 1995 | AGRIP |
| 26. | FA993-401W | Vance/Low Sprout | 1995 | WPB |
| 27. | FA993-402W | Grandin/Low Sprout | 1995 | WPB |
| 28. | BW173 | Col*s//Saric/Nep/3/Col*5/Saric/Nep | 1994 | ACMT |
| 29. | BW191 | pending | 1995 | ACMT |
| 30. | HY417 | HY377/L8474-D | 1994 | ACSC |
| 31. | MN2535 | Nyu Bay/2375//Marshall | 1995 | MN |
| 32. | MN2540 | 2385/Incruzilhadall//Ning7840//SBB03578 | 1995 | MN |

METHODS

Following are the variables and testing methods used in the evaluation process:

Test Weight Per Bushel - The weight per Winchester bushel of cleaned, dry wheat subsequent to passing the sample through a Carter-Day dockage tester.

1000-Kernel Weight - The weight of 1000 kernels was determined by counting, using a Seedburo seed counter, the number of kernels in 10 g samples of cleaned, hand-picked wheat.^{5/}

Kernel Size - The percentages of the size of kernels (large, medium and small) were determined using a wheat sizer as described by Shuey^{6/}.

The sieves of the sizer were clothed as follows:

Top Sieve - Tyler #7 with 2.92 mm opening

Middle Sieve - Tyler #9 with 2.24 mm opening

Bottom Sieve - Tyler #12 with 1.65 mm opening

Milling - The samples were cleaned by passing the wheat through a Carter-Day dockage tester and through a modified Forster scourer (Model 6). The clean, dry samples were pretempered to 12.5% moisture for at least 72 hours, then tempered to 15.5% moisture and allowed to stand overnight prior to milling.

^{5/} Mention of a trademark name or a proprietary product does not constitute a guarantee or warranty of the product by the U. S. Department of Agriculture, and does not imply its approval to the exclusion of other products that may also be suitable.

^{6/} Shuey, William C. A Wheat Sizing Technique for Predicting Flour Milling Yield. Cereal Science Today 5:71-72,75 (1960).

The Uniform Regional Nursery spring wheat samples were milled in Brabender Quadrumat Senior mill heads. The stock from the Break head was sifted for 60 sec on a strand sifter using #35 and #80 Tyler sieves. The throughs of the #80 sieve were classified as break flour; the overs of the #35 sieve classified as bran; and the overs of the #80 sieve were passed through the reduction head of the mill. The reduction stock was sifted for 60 sec on a #80 Tyler sieve. The throughs were classified as reduction flour and the overs as shorts. The break and reduction flours were combined and classified as patent flour.

The Field Plot Nursery samples were milled in a Buhler continuous experimental mill. The Buhler mill had been slightly modified for better comparison with commercial milling operations. Break scalping sieves were clothed with #54 stainless steel wire. Reduction scalping sieves were clothed with #58, #66 and #105 stainless steel wire for the first, second and third reductions, respectively. All flour sieves were clothed with #135 stainless steel wire.

The six flour streams obtained from the Buhler-milled wheat were combined and classified as patent flour. The extraction of a good milling wheat using this flow is approximately 68% and is comparable to a commercial "long patent" extraction flour. At a 68% flour extraction, changes in flour ash are most sensitive to changes in percent extraction.

Hardness Test - Wheat hardness scores were determined according to AACCI Method 39-70A. The procedure involved grinding the wheat samples in a Udy grinder and obtaining reflectance data from a Technicon 450 near infrared analyzer. Wavelengths used were 1680 nm and 2230 nm. This procedure was developed by Mr. Karl Norris, USDA, Beltsville through a co-operative research project in which the Hard Red Spring and Durum Wheat Quality Laboratory also participated. Hard red spring wheats generally have NIR scores between 60 and 85.

SKWCS Hardness Index - The single kernel wheat characterization system (SKWCS) instrument (developed by the GMRL, Manhattan, KS) was used to determine the hardness index and the percent distribution of kernels that were classified as soft, semi-soft, semi-hard, and hard.

Protein Content - Wheat and flour proteins were determined from NIR reflectance data, the Kjeldahl procedure, or Leco Nitrogen determinations. Nitrogen values, as determined the Kjeldahl procedure or Leco, were multiplied by 5.7 to calculate protein values. Values were reported on a 14%mb.

Mineral or Ash Content - Wheat or flour ash was determined by measuring the residual weight of minerals remaining after incinerating the sample for approximately 16 hours at 575°C. The results were reported as percentages of the sample weights. Values were reported on a 14%mb.

Mixograph Analysis - Mixograph data was determined on each flour sample by using 30 g of flour (as is mb) and adding 20 cc of water. The sensitivity spring setting was set at 10. All mixograms were run with constant weight of flour and volume of water. Water absorptions were adjusted according to the peak heights of the mixograms. Correction factors were determined from a series of flours by varying the amount of absorption.

Mixogram Patterns - Reference mixogram patterns shown on page 17 illustrate different dough characteristics. A single number is assigned each pattern to characterize and simplify the classification of the curves. The larger numbers indicate stronger curve characteristics.

Baking Procedure and Formula - Following is the baking formula used:

| | |
|------------|---|
| 100% flour | 3% Non-fat Dry Milk |
| 2% salt | 1% Instant Dry Yeast |
| 5% sugar | 2% shortening (Crisco, melted) - 100 g loaves |
| | 1% shortening (Crisco, melted) - 25 g loaves |

Samples were mixed to optimum dough development in National Manufacturing mixers, the micro mixer for 25 g samples and the 100 g special mixer for 100 g samples. Ascorbic Acid (40 ppm) for oxidation and Fungal Amylase (Doh-Tone)(15SKB units) for enzymatic supplement were added to each sample. Dough was moulded in a Roll-Er-Up moulder. Samples undergo 3 hour fermentation, 1 hour proof and 20 minute bake time.

Absorption - The amount of water, expressed as percent of flour, required for optimum dough consistency.

Dough Characteristics (DC) - Empirical scores ranging from 0-6 were used to classify dough as sticky-weak (0), pliable (2), elastic (3), or bucky (6). The most favorable rating for optimum bread characteristics would be elastic.

Crumb Color (CC) - A value was determined by comparing the internal crumb color of the sample bread with the crumb color of a baking standard. The standard flour was an equal blend of the variety Grandin grown at Casselton, ND, Crookston, MN, and Brookings, SD. Empirical scores ranging from 0-6 were used to classify crumb color as yellow (0), gray (2), dull (3), creamy (5), or bright white (6).

Crumb Grain (CG) - Empirical scores ranging from 0-6 were used to classify crumb grain as irregular, thick (0), open, thick (3), or fine (6).

Crumb Texture (CT) - Empirical scores ranging from 0-6 were used to classify crumb texture as harsh (0), coarse (3), or silky (6).

Loaf Volume - The volume (cc) of the baked loaf as determined by rapeseed displacement.

DISCUSSION

The following discussion presents the basic techniques and criteria used in the quality evaluation of the Hard Red Spring Wheat cultivars.

For the Uniform Regional Nursery samples, each quality variable (except for bake absorption, mix time, and CG) per sample was averaged within each hard red spring wheat region (Northeast, Southeast, Midwest, and West). Values that are bolded/underlined indicate that averages are higher than the standard (Butte 86). For wheat and flour ash, bolded/underlined values are lower than the standard.

All samples were compared with a milling and baking standard representative of the crop year. Agronomic and climatic conditions of the individual locations can affect the quality of the wheat such that the evaluation of all samples, including commercial cultivars, harvested from these locations may be classified as questionable to unsatisfactory. For example, an area may produce low protein wheat with large and plump kernels, good milling performance, and good kernel characteristics, but with low flour protein and unsatisfactory baking performance such as short mixing time, low loaf volume, and weak dough characteristics. The wheat from this area could not be considered a strong spring wheat and would not maintain the quality expected from the spring wheat producing area. An acceptable variety should have tolerance to a wide range of environmental conditions.

Kernel Characteristics are important in determining the initial value of wheat. Poor kernel characteristics could disqualify a new variety from further consideration. Because of the present wheat grading system, high test weight is desirable. Plump kernels are desirable because of their high ratio of endosperm to bran. Low 1000-kernel weight and small kernel size distribution affect milling performance due to their high ratio of bran to endosperm. Wheat ash is an important factor when comparing one cultivar against other standard cultivars. Wheat with a high mineral content may yield flour with a high ash content. Wheat protein quality and quantity must be considered as important characteristics when comparing cultivars grown at the same location. Wheats with low protein values are undesirable since protein affects baking performance.

Milling Performance is a very important characteristic of spring wheats. Low extraction and high flour ash are major factors that are unacceptable under commercial milling operations. As a general rule, an increase of 0.01% in ash content is equivalent to an increase of approximately 2% in flour extraction.

Milling characteristics: Wheat comprising soft kernels requires different milling techniques when compared with wheat of uniform hard kernels. With commercial mills flowed for hard vitreous spring wheats, the introduction of soft wheats into the mill will result in milling problems. Likewise, a sample which is extremely hard and vitreous will mill differently. Both types of wheat (soft and vitreous) require different roll pressures, clothing, sifter surface, and temper to be milled properly. The blending of normal bread wheats with soft wheats or extremely hard, vitreous wheats is undesirable since they are not compatible in the milling operation. Adjustments would either have to be made in the milling flow or in tempering procedures to compensate for differences in kernel hardness. Properties of soft wheat may or may not be compatible with other wheats. Therefore, maintaining pure varieties with uniform milling characteristics is important.

The amount of protein recovered in flour from wheat is important. High protein wheats yielding low protein flours are not desirable. Such wheats would contain much of the protein distributed in the outer portion of the kernels resulting in excessive protein in the feed streams. Therefore, higher protein wheat would be necessary to yield a flour with protein content comparable to that of a wheat that yields optimum flour protein.

Mixogram patterns are important in estimating the strength and mixing tolerance or potential mixing tolerance of a flour. From the standard mixogram patterns (page 17), patterns 6 - 8 indicate flours with optimum mixing tolerance and gluten strength. Mixogram patterns 9 - 11 indicate flour samples with long mixing times, and strong gluten characteristics, whereas, patterns 1 - 5 indicate flours with weak gluten characteristics and short mixing times. Both the pattern and length of the curve are important, and both must be considered in the evaluation. Abnormal curves, such as sway-back or long initial times to incorporate water, indicate undesirable characteristics.

Baking evaluation takes into account the flour water absorption, mixing time, dough characteristics, loaf volume, crumb texture, and machinability. Flour samples with low water absorptions would be unsatisfactory. Samples with extremely short mixing times would relate to weak gluten characteristics and be considered undesirable.

The crumb grain or appearance of the interior of the loaf indicates the structural integrity during baking. Crumb grain is likely related to gluten protein properties (quantity and quality).

Bread loaf volume indicates potential dough strength. Optimum loaf volume demonstrates the capacity, or lack thereof, for the dough to expand under pressure and to contain the entrapped gases during expansion. Weak doughs tend to collapse and yield breads with low loaf volumes, or yield breads with extremely large volumes containing large holes in the interior. Low protein flours produce extensible doughs that do not expand adequately during fermentation or baking and thus produce bread

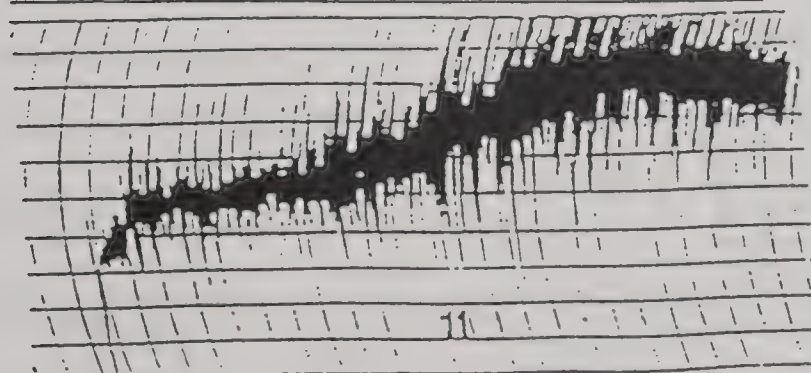
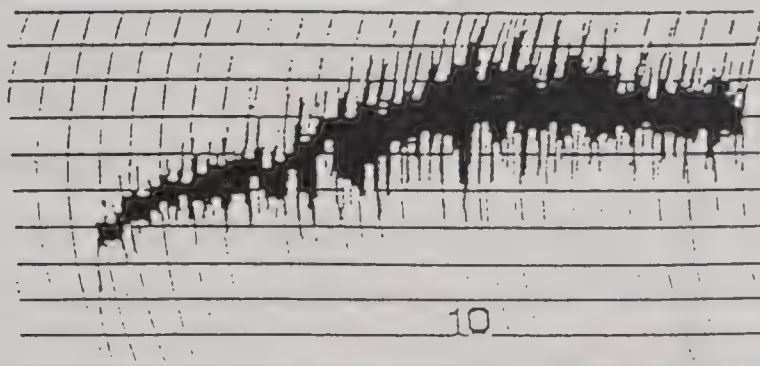
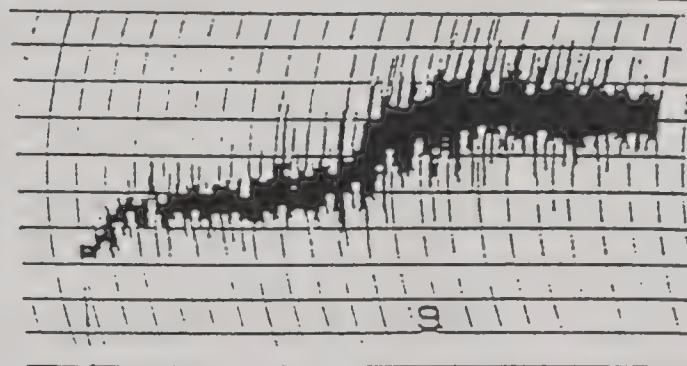
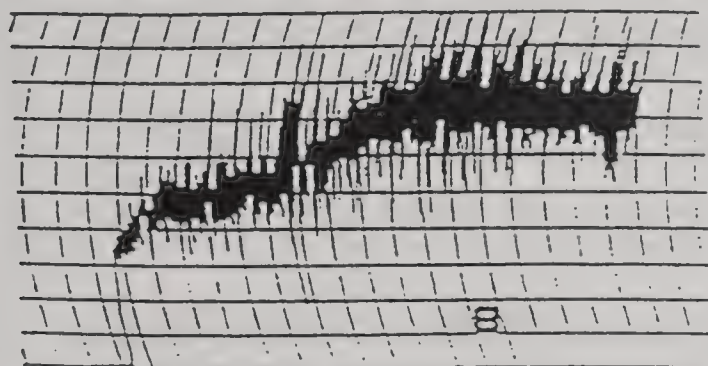
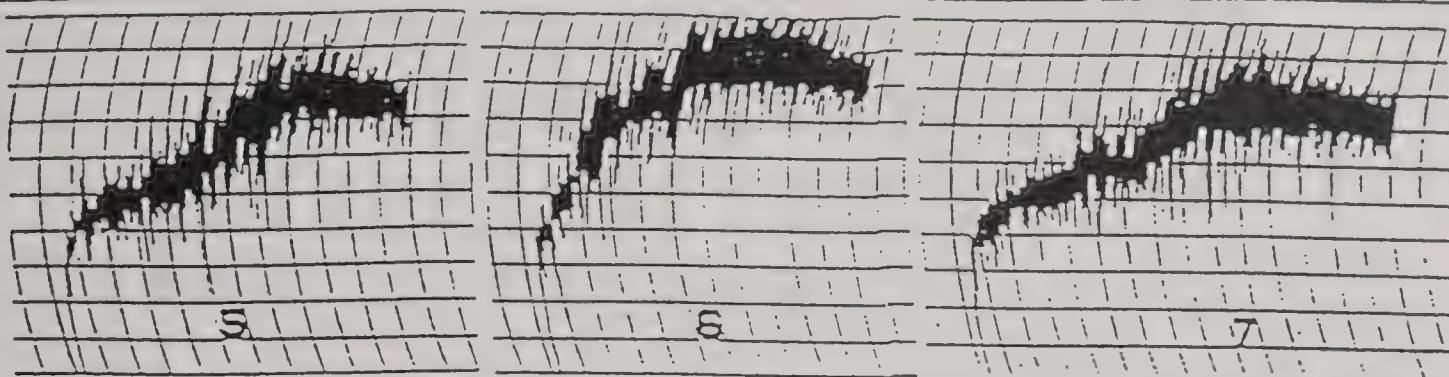
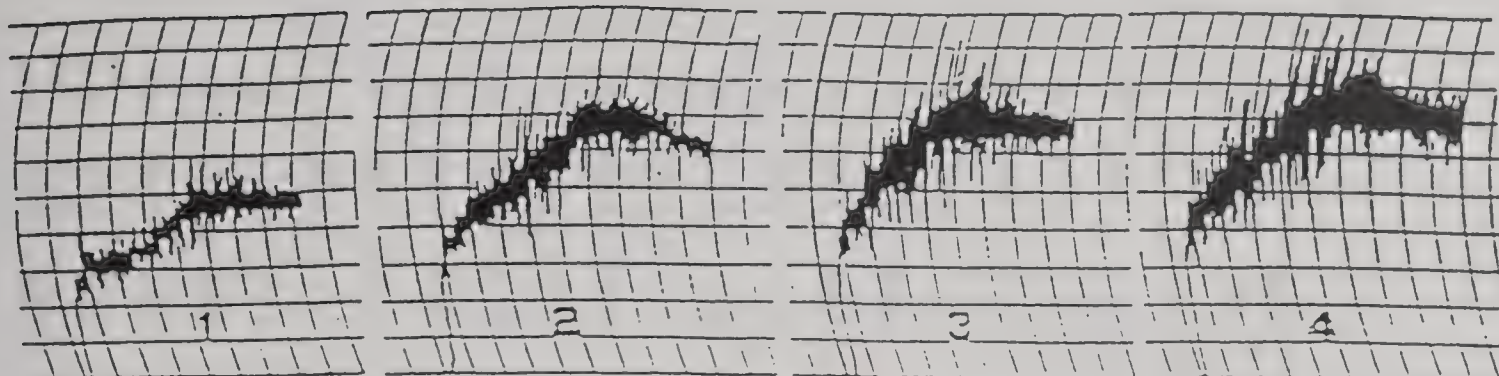
with low loaf volumes. Tough and very bucky doughs are bound too tightly and impede expansion of the gases that result in breads with low loaf volume. Loaf volume is a characteristic probably related to gluten functionality in the dough.

UNIFORM REGIONAL NURSERY SAMPLES - 1995 CROP

A total of 578 samples were received from 19 stations in 7 states. Twenty-seven selections were experimental lines and the remainder were commercial cultivars. Commercial cultivars included Butte 86 (used as the standard for comparison), Chris, Era, Marquis, and Stoa. Each sample was evaluated for kernel characteristics, milling performance, and breadmaking properties.

Tables 1-5 include data from the Northeast area; table 6-10 include data from the Southeast area; table 11-14 include data from the Midwest area; and table 15-19 include data from the Western area. Averages for each area are included in tables 20-23.

STANDARD MIXOGRAPH PATTERNS



1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 1

| LOCATION: <i>Carrington, ND</i> | | | | | | | | | | FARGO, ND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS | | | HARDNESS | | NIR HARD- NESS | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C C | C G | C T | LOAF VOL (cc) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | A | B | C | DISTRIBUTION | | | INDEX | PRO | ASH (14% mb) | EXT (%) | PRO | ASH (14 % mb) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB
FARGO, ND

Table 1(cont)

LOCATION: *Carrington, ND*

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS | | | | HARDNESS | | NIR | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C G | C T | LOAF VOL (cc) |
|----------|---------------|-------------|-----------|-----------|-------|----|----|----|----------|---------------|------|-----------------|------------|------------|------------------|-------------|---|------------|------------|-------------|----------------------|--------|--------|--------|---------------------|
| | | | | | A | B | C | D | INDEX | HARD- NESS | | PRO (14% mb) | ASH (%) | EXT (%) | FLOUR | | | | | | | | | | |
| | | | | | | | | | | | | | | | PRO (14 % mb) | ASH (mb) | | | | | | | | | |
| MT9360 | 53.0 | 25.6 | 3 | 17 | 7 | 17 | 26 | 50 | 56.4 | 55 | 15.9 | 2.76 | 38.0 | 15.6 | 0.78 | 55.0 | 2 | 55.0 | 3.75 | 3 | 2 | 4 | 5 | 5 | 193 |
| N89-0562 | 57.0 | 30.3 | 20 | 4 | 1 | 6 | 17 | 76 | 66.5 | 76 | 16.2 | 2.05 | 39.9 | 15.1 | 0.59 | 59.6 | 1 | 59.6 | 2.50 | 2 | 3 | 5 | 6 | 6 | 201 |
| N92-2031 | 58.5 | 27.0 | 23 | 2 | 0 | 0 | 5 | 95 | 77.7 | 87 | 16.7 | 1.88 | 48.8 | 16.1 | 0.52 | 59.3 | 2 | 59.3 | 3.50 | 3 | 3 | 3 | 5 | 5 | 194 |
| N92-0248 | 56.6 | 25.8 | 16 | 4 | 4 | 14 | 30 | 52 | 58.9 | 68 | 14.9 | 1.70 | 49.3 | 14.1 | 0.44 | 55.3 | 1 | 55.3 | 3.00 | 2 | 3 | 4 | 5 | 5 | 187 |
| N92-0434 | 55.6 | 29.0 | 23 | 3 | 4 | 5 | 19 | 72 | 65.1 | 60 | 14.8 | 1.84 | 43.5 | 14.1 | 0.46 | 59.0 | 2 | 59.0 | 4.00 | 3 | 4 | 3 | 5 | 5 | 204 |
| FA993-40 | 52.6 | 26.0 | 10 | 9 | 10 | 24 | 37 | 29 | 51.3 | 51 | 16.1 | 1.89 | 42.5 | 15.7 | 0.48 | 57.6 | 2 | 57.6 | 3.25 | 3 | 4 | 3 | 4 | 4 | 190 |
| FA993-40 | 54.2 | 25.6 | 9 | 5 | 11 | 20 | 36 | 33 | 51.9 | 64 | 16.0 | 1.92 | 49.3 | 15.1 | 0.45 | 60.0 | 2 | 60.0 | 2.75 | 2 | 0 | 2 | 5 | 5 | 188 |
| BW173 | 56.5 | 28.4 | 17 | 3 | 1 | 4 | 23 | 72 | 65.3 | 84 | 17.0 | 1.82 | 59.5 | 16.2 | 0.46 | 59.6 | 3 | 59.6 | 4.00 | 3 | 4 | 4 | 6 | 6 | 204 |
| BW191 | 57.0 | 29.3 | 26 | 2 | 2 | 8 | 30 | 60 | 63.2 | 77 | 16.4 | 1.87 | 56.6 | 15.3 | 0.49 | 61.4 | 3 | 61.4 | 3.50 | 3 | 3 | 5 | 6 | 6 | 212 |
| HY417 | 53.8 | 27.2 | 6 | 12 | 12 | 17 | 34 | 37 | 53.3 | 45 | 13.1 | 1.87 | 48.1 | 12.1 | 0.57 | 52.9 | 2 | 54.8 | 5.25 | 2 | 3 | 4 | 5 | 5 | 193 |
| MN2535 | 61.6 | 29.6 | 9 | 3 | 5 | 17 | 30 | 48 | 58.6 | 71 | 17.0 | 1.93 | 54.8 | 16.6 | 0.47 | 61.4 | 3 | 62.4 | 3.00 | 3 | 3 | 2 | 5 | 5 | 204 |

DISTRIBUTION: A= % Soft

B= % Semi-Soft

C= % Semi-Hard

D= % Hard

| RATINGS: | | 0 | | | 3 | | | 6 | | |
|---------------------|--|--------------|--|---------|---------|--|-------------|-------|--|--------------|
| | | STICKY-WEAK | | PLIABLE | ELASTIC | | CREAMY | BUCKY | | BRIGHT WHITE |
| DOUGH CHAR (DC): | | YELLOW | | GREY | DULL | | OPEN, THICK | FINE | | SILKY |
| CRUMB COLOR (CC): | | IRREG, THICK | | HARSH | COARSE | | | | | |
| CRUMB GRAIN (CG): | | | | | | | | | | |
| CRUMB TEXTURE (CT): | | | | | | | | | | |

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 2

| LOCATION: Crookston, MN | | | | | | | | | | FARGO, ND | | | | | | | | | | | | | | | | | | |
|-------------------------|---------------|-------------|-----------|-----------|--------------|----|----|----|---------------|-----------|-----------------|------|----------------------|------------------|-------------|------------|-----|-------|------------------|------------|------------|-------------|----------------------|--------|--------|--------|--------|---------------------|
| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS | | | | HARDNESS | | | | NIR HARD- NESS | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C C | C G | C T | LOAF VOL (cc) |
| | | | | | DISTRIBUTION | | | | HARD- NESS | | PRO | | | ASH | | EXT (%) | PRO | | ASH (14 % mb) | | | | | | | | | |
| | | | | | A | B | C | D | INDEX | PRO | ASH (14% mb) | PRO | | ASH (14 % mb) | Rating----- | | | | | | | | | | | | | |
| Marquis | 56.5 | 30.7 | 46 | 2 | 0 | 4 | 18 | 78 | 69.8 | 83 | 15.6 | 2.05 | 54.9 | 14.3 | 0.50 | 61.1 | 3 | 59.0 | 2.50 | 3 | 3 | 6 | 5 | 5 | 3 | 6 | 5 | 172 |
| Chris | 56.1 | 27.5 | 27 | 4 | 2 | 5 | 14 | 79 | 70.4 | 81 | 16.0 | 1.89 | 56.7 | 14.9 | 0.45 | 56.5 | 2 | 58.2 | 2.75 | 3 | 3 | 5 | 4 | 4 | 3 | 5 | 4 | 188 |
| Era | 54.6 | 23.4 | 11 | 7 | 1 | 3 | 7 | 89 | 77.9 | 74 | 14.3 | 1.95 | 57.5 | 12.8 | 0.48 | 56.2 | 3 | 58.2 | 4.00 | 3 | 4 | 5 | 4 | 4 | 3 | 4 | 5 | 205 |
| Stoa | 55.1 | 29.4 | 32 | 4 | 0 | 1 | 8 | 91 | 78.4 | 85 | 15.8 | 1.97 | 57.5 | 14.5 | 0.45 | 58.2 | 3 | 60.2 | 3.75 | 3 | 3 | 3 | 4 | 4 | 3 | 3 | 4 | 198 |
| Butte 86 | 55.1 | 30.5 | 40 | 3 | 1 | 2 | 14 | 83 | 74.2 | 82 | 15.8 | 1.85 | 56.8 | 13.9 | 0.44 | 60.3 | 3 | 62.2 | 2.75 | 3 | 3 | 3 | 4 | 4 | 3 | 3 | 4 | 191 |
| SD3151 | 56.6 | 30.1 | 26 | 3 | 0 | 3 | 14 | 83 | 70.5 | 73 | 15.8 | 1.96 | 55.5 | 14.6 | 0.50 | 57.3 | 3 | 61.0 | 4.50 | 3 | 3 | 5 | 5 | 5 | 3 | 5 | 5 | 215 |
| SD3156 | 57.9 | 30.1 | 38 | 3 | 2 | 4 | 17 | 77 | 68.5 | 69 | 15.5 | 1.96 | 56.7 | 13.8 | 0.42 | 57.6 | 3 | 61.4 | 4.25 | 3 | 5 | 5 | 6 | 6 | 3 | 5 | 6 | 192 |
| SD3164 | 59.5 | 34.7 | 55 | 2 | 0 | 4 | 18 | 78 | 68.0 | 83 | 16.0 | 1.88 | 57.8 | 14.5 | 0.41 | 60.8 | 4 | 60.8 | 3.50 | 3 | 5 | 5 | 6 | 6 | 3 | 5 | 6 | 202 |
| SD8089 | 57.6 | 30.9 | 37 | 3 | 0 | 2 | 11 | 87 | 72.5 | 83 | 14.7 | 1.58 | 58.3 | 13.1 | 0.42 | 55.5 | 2 | 57.4 | 3.50 | 3 | 4 | 6 | 4 | 4 | 3 | 4 | 6 | 192 |
| SD8088 | 57.8 | 29.5 | 32 | 4 | 0 | 3 | 14 | 83 | 70.9 | 76 | 14.7 | 1.69 | 55.2 | 13.0 | 0.43 | 55.5 | 2 | 57.4 | 4.00 | 3 | 5 | 5 | 4 | 4 | 3 | 5 | 4 | 193 |
| SD3165 | 57.1 | 34.4 | 43 | 3 | 0 | 5 | 23 | 72 | 66.1 | 85 | 16.0 | 1.94 | 53.8 | 14.4 | 0.41 | 61.4 | 3 | 63.4 | 3.25 | 3 | 3 | 5 | 4 | 4 | 3 | 5 | 4 | 192 |
| SD3161 | 58.6 | 29.8 | 13 | 7 | 0 | 3 | 21 | 76 | 68.1 | 61 | 15.5 | 1.79 | 52.4 | 14.0 | 0.40 | 57.9 | 3 | 59.8 | 4.50 | 3 | 3 | 6 | 4 | 4 | 3 | 6 | 4 | 192 |
| MN91309 | 56.2 | 33.9 | 33 | 3 | 2 | 9 | 27 | 62 | 62.9 | 78 | 15.8 | 1.79 | 55.8 | 13.8 | 0.44 | 59.0 | 3 | 61.0 | 3.50 | 3 | 5 | 3 | 5 | 5 | 3 | 5 | 5 | 190 |
| MN91324 | 56.8 | 30.3 | 34 | 4 | 1 | 3 | 7 | 89 | 74.8 | 80 | 15.4 | 1.91 | 54.5 | 13.6 | 0.49 | 60.0 | 3 | 60.0 | 2.75 | 2 | 4 | 5 | 4 | 4 | 2 | 4 | 5 | 198 |
| SBE0050 | 56.4 | 29.9 | 35 | 3 | 1 | 4 | 17 | 78 | 68.8 | 69 | 14.5 | 1.86 | 51.4 | 12.9 | 0.54 | 54.6 | 2 | 58.6 | 4.25 | 3 | 3 | 3 | 4 | 4 | 3 | 3 | 4 | 193 |
| MN92387 | 56.5 | 30.3 | 45 | 2 | 2 | 12 | 32 | 54 | 60.6 | 63 | 14.7 | 2.01 | 53.6 | 13.3 | 0.45 | 53.2 | 2 | 61.0 | 3.00 | 2 | 0 | 6 | 5 | 5 | 2 | 0 | 6 | 188 |
| ND678 | 57.0 | 29.5 | 28 | 7 | 1 | 1 | 5 | 93 | 79.3 | 90 | 15.9 | 1.81 | 52.8 | 14.1 | 0.44 | 59.0 | 3 | 63.0 | 3.00 | 3 | 5 | 3 | 5 | 5 | 3 | 5 | 5 | 200 |
| ND688 | 56.2 | 30.0 | 44 | 4 | 1 | 1 | 7 | 91 | 75.8 | 85 | 15.1 | 1.82 | 57.8 | 13.4 | 0.46 | 56.9 | 3 | 58.6 | 3.00 | 3 | 0 | 3 | 4 | 4 | 3 | 0 | 3 | 180 |
| SBF0402 | 57.8 | 32.6 | 48 | 2 | 1 | 8 | 26 | 65 | 63.8 | 72 | 16.0 | 1.77 | 58.6 | 14.6 | 0.39 | 58.2 | 4 | 62.2 | 4.50 | 3 | 0 | 6 | 6 | 6 | 3 | 0 | 6 | 192 |
| MT9354 | 52.2 | 27.6 | 15 | 18 | 1 | 3 | 8 | 88 | 78.1 | 70 | 15.9 | 1.95 | 51.4 | 14.5 | 0.34 | 57.9 | 3 | 61.8 | 4.00 | 3 | 0 | 3 | 5 | 5 | 3 | 0 | 3 | 184 |

**USDA / ARS
WHEAT QUALITY LAB**

LOCATION: *Crookston, MN*

FARGO, ND

| DISTRIBUTION: A = % Soft | | 0 | | 3 | | 6 | |
|--------------------------|---------------------|--------------|---------|-------------|--------|--------------|--|
| B = % Seml-Soft | DOUGH CHAR (DC): | STICKY-WEAK | PLIABLE | ELASTIC | BUCKY | | |
| C = % Seml-Hard | CRUMB COLOR (CC): | YELLOW | GREY | DULL | CREAMY | BRIGHT WHITE | |
| D = % Hard | CRUMB GRAIN (CG): | IRREG, THICK | | OPEN, THICK | | FINE | |
| | CRUMB TEXTURE (CT): | HARSH | | COARSE | | SILKY | |

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WHEAT QUALITY LAB

Table 3

LOCATION: Langdon, ND

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS | | | | HARDNESS | | | | NIR | | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C G | C T | LOAF VOL (cc) |
|----------|---------------|-------------|-----------|-----------|--------------|----|----|----|----------|-----|-----------------|------|---------------|------|-----------------|---------------------|------------------|------|------------------|---|------------|------------|-------------|----------------------|--------|--------|--------|---------------------|
| | | | | | DISTRIBUTION | | | | INDEX | | | | HARD- NESS | PRO | ASH (14% mb) | FLOUR EXT (%) | PRO | | ASH (14 % mb) | | | | | | | | | |
| | | | | | A | B | C | D | INDEX | PRO | ASH (14% mb) | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | PRO | | | | | ASH (14 % mb) | | | | | | | | | | | |
| Marquis | 53.4 | 24.8 | 14 | 4 | 3 | 6 | 19 | 72 | 81.6 | 66 | 15.9 | 1.99 | 49.8 | 15.1 | 0.50 | 60.0 | 3 | 60.0 | 3.25 | 3 | 3 | 6 | 5 | 183 | | | | |
| Chris | 54.3 | 25.3 | 19 | 4 | 2 | 8 | 19 | 71 | 79.9 | 74 | 16.8 | 1.88 | 54.2 | 16.2 | 0.44 | 65.7 | 4 | 65.7 | 3.00 | 3 | 3 | 4 | 6 | 214 | | | | |
| Era | 50.5 | 22.1 | 5 | 14 | 3 | 6 | 14 | 77 | 73.9 | 61 | 14.8 | 2.00 | 53.1 | 13.8 | 0.53 | 57.6 | 2 | 58.5 | 4.50 | 3 | 3 | 5 | 5 | 204 | | | | |
| Stoa | 52.2 | 27.1 | 14 | 9 | 1 | 5 | 23 | 71 | 69.5 | 71 | 16.9 | 2.06 | 50.7 | 15.8 | 0.44 | 61.1 | 3 | 61.1 | 4.50 | 3 | 3 | 5 | 6 | 210 | | | | |
| Butte 86 | 54.0 | 29.8 | 33 | 3 | 1 | 8 | 23 | 68 | 69.5 | 75 | 17.1 | 1.89 | 55.1 | 15.7 | 0.45 | 62.7 | 3 | 62.7 | 3.50 | 3 | 3 | 5 | 6 | 213 | | | | |
| SD3151 | 54.2 | 28.9 | 26 | 3 | 2 | 5 | 17 | 76 | 79.4 | 66 | 17.0 | 2.04 | 47.9 | 15.9 | 0.48 | 57.9 | 3 | 58.5 | 4.50 | 3 | 3 | 5 | 6 | 198 | | | | |
| SD3156 | 55.3 | 30.4 | 36 | 2 | 3 | 15 | 26 | 56 | 68.3 | 72 | 17.0 | 1.92 | 53.0 | 15.9 | 0.42 | 61.1 | 3 | 61.1 | 3.25 | 3 | 3 | 5 | 6 | 205 | | | | |
| SD3164 | 57.7 | 33.9 | 50 | 2 | 3 | 16 | 28 | 53 | 66.5 | 87 | 16.8 | 1.89 | 54.2 | 15.7 | 0.43 | 63.1 | 3 | 63.1 | 3.50 | 3 | 3 | 4 | 6 | 238 | | | | |
| SD8089 | 54.7 | 27.4 | 19 | 7 | 5 | 19 | 32 | 44 | 57.5 | 70 | 15.7 | 1.85 | 49.3 | 14.7 | 0.46 | 59.0 | 3 | 59.0 | 3.75 | 3 | 5 | 6 | 6 | 210 | | | | |
| SD8088 | 55.8 | 27.7 | 19 | 6 | 2 | 11 | 30 | 57 | 63.4 | 66 | 15.6 | 1.81 | 46.0 | 14.5 | 0.45 | 57.3 | 2 | 57.3 | 4.50 | 2 | 6 | 5 | 6 | 199 | | | | |
| SD3165 | 55.8 | 33.8 | 45 | 3 | 4 | 12 | 29 | 55 | 64.2 | 79 | 17.5 | 2.04 | 50.9 | 16.4 | 0.46 | 61.8 | 2 | 62.4 | 3.00 | 3 | 3 | 6 | 6 | 218 | | | | |
| SD3161 | 56.7 | 31.1 | 27 | 3 | 4 | 14 | 26 | 56 | 70.1 | 55 | 17.0 | 1.91 | 49.3 | 16.3 | 0.41 | 60.3 | 4 | 60.3 | 4.50 | 3 | 5 | 4 | 5 | 208 | | | | |
| MN91309 | 55.0 | 28.1 | 17 | 6 | 2 | 10 | 18 | 70 | 79.1 | 74 | 16.1 | 1.90 | 49.8 | 15.0 | 0.44 | 59.0 | 3 | 59.0 | 4.25 | 3 | 3 | 3 | 5 | 225 | | | | |
| MN91324 | 55.8 | 27.3 | 15 | 7 | 2 | 8 | 16 | 74 | 68.4 | 84 | 16.5 | 2.01 | 52.1 | 15.3 | 0.48 | 64.0 | 3 | 64.2 | 4.00 | 3 | 3 | 3 | 5 | 233 | | | | |
| SBE0050 | 55.1 | 27.3 | 18 | 5 | 1 | 4 | 17 | 78 | 69.6 | 71 | 15.3 | 1.97 | 48.4 | 14.3 | 0.49 | 60.8 | 3 | 60.8 | 4.25 | 3 | 3 | 4 | 5 | 213 | | | | |
| MN92387 | 56.4 | 26.6 | 14 | 7 | 1 | 4 | 15 | 80 | 73.0 | 76 | 16.1 | 1.86 | 48.8 | 14.6 | 0.40 | 61.1 | 3 | 61.1 | 3.25 | 3 | 6 | 6 | 6 | 211 | | | | |
| ND688 | 55.3 | 30.1 | 41 | 3 | 3 | 5 | 23 | 69 | 65.1 | 76 | 16.3 | 2.09 | 53.3 | 15.0 | 0.44 | 61.1 | 3 | 61.1 | 3.50 | 3 | 0 | 3 | 4 | 202 | | | | |
| SBF0402 | 55.8 | 31.3 | 38 | 3 | 5 | 25 | 36 | 34 | 55.7 | 67 | 17.5 | 2.30 | 54.2 | 16.4 | 0.41 | 62.1 | 4 | 62.4 | 4.75 | 3 | 3 | 5 | 5 | 215 | | | | |
| MT9354 | 54.0 | 27.2 | 9 | 9 | 2 | 4 | 21 | 73 | 70.1 | 76 | 16.5 | 1.81 | 49.8 | 15.5 | 0.47 | 60.8 | 4 | 60.8 | 5.25 | 3 | 3 | 4 | 5 | 210 | | | | |
| MT9360 | 52.4 | 23.8 | 2 | 23 | 4 | 9 | 24 | 63 | 66.6 | 64 | 16.9 | 1.96 | 44.1 | 16.3 | 0.51 | 60.0 | 4 | 60.0 | 4.25 | 3 | 5 | 4 | 5 | 206 | | | | |

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Table 3(cont)

LOCATION: *Langdon, ND*

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS | | | | HARDNESS | | NIR | | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D | C | | | | | LOAF VOL (cc) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------|---------------|-------------|-----------|-----------|-------|---|---|---|----------|---------------|-----|-----------------|------------|--------------|----------|-----|------------------|---|------------|------------|-------------|----------------------|---|---|---|---|---|---------------|---------------------|-----|-----------------|------------|-----|------------------|---|---|---|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | A | B | C | D | INDEX | HARD- NESS | PRO | ASH (14% mb) | EXT (%) | FLOUR | | PRO | ASH (14 % mb) | D | | | | | | C | C | G | T | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | DISTRIBUTION | HARDNESS | | | | | | | | | | | | | HARD- NESS | | PRO | ASH (14% mb) | EXT (%) | PRO | ASH (14 % mb) | D | C | C | G | T | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DISTRIBUTION: A= % Soft

B= % Seml-Soft

C= % Seml-Hard

D= % Hard

RATINGS:

DOUGH CHAR (DC):

CRUMB COLOR (CC):

CRUMB GRAIN (CG):

CRUMB TEXTURE (CT):

0

STICKY-WEAK

YELLOW

IRREG, THICK

HARSH

PLIABLE

GREY

OPEN, THICK

COARSE

3

ELASTIC

DULL

CREAMY

BRIGHT WHITE

6

BUCKY

BRIGHT WHITE

FINE

SILKY

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 4

| LOCATION: <i>Minot, ND</i> | | | | | | | | | | FARGO, ND | | | | | | | | | | | | | | | |
|----------------------------|---------------|-------------|-----------|-----------|----------------|----|----|----|------|-----------|---------------|-------|-----------------|------------|------|------------|------------|-------------|----------------------|--------|------------------|---|---|-----|---------------------|
| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | | NIR | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | Rating----- | | | | LOAF VOL (cc) |
| | | | | | A | B | C | D | | INDEX | HARD- NESS | PRO | ASH (14% mb) | EXT (%) | PRO | | | | | | ASH (14 % mb) | C | C | C | |
| Marquis | 55.5 | 28.3 | 30 | 6 | 4 | 12 | 29 | 55 | 64.7 | 74 | 16.2 | 1.73 | 58.9 | 15.3 | 0.45 | 57.6 | 3 | 57.6 | 3.00 | 3 | 3 | 3 | 4 | 203 | |
| Chris | 60.7 | 28.3 | 25 | 3 | 1 | 10 | 29 | 60 | 64.5 | 85 | 15.6 | 1.62 | 63.0 | 15.3 | 0.37 | 59.6 | 3 | 59.6 | 2.75 | 3 | 5 | 6 | 5 | 204 | |
| Era | 61.6 | 31.6 | 44 | 3 | 2 | 7 | 23 | 68 | 64.6 | 74 | 14.1 | 1.53 | 63.5 | 13.1 | 0.39 | 55.0 | 2 | 55.0 | 3.50 | 3 | 4 | 6 | 4 | 192 | |
| Stoa | 60.1 | 29.6 | 22 | 3 | 1 | 4 | 20 | 75 | 68.3 | 77 | 14.5 | 1.62 | 64.5 | 13.8 | 0.38 | 60.0 | 4 | 60.0 | 4.00 | 3 | 3 | 4 | 5 | 208 | |
| Butte 86 | 61.8 | 34.7 | 52 | 2 | 1 | 8 | 33 | 58 | 62.0 | 86 | 15.0 | 1.56 | 65.4 | 14.0 | 0.37 | 60.8 | 3 | 60.8 | 3.00 | 3 | 4 | 3 | 5 | 192 | |
| SD3151 | 62.6 | 31.9 | 25 | 2 | 2 | 10 | 24 | 64 | 66.1 | 76 | 16.3 | 1.63 | 58.5 | 15.8 | 0.41 | 58.6 | 3 | 58.6 | 4.25 | 3 | 3 | 3 | 5 | 205 | |
| SD3156 | 63.2 | 32.9 | 47 | 1 | 0 | 8 | 36 | 56 | 62.1 | 81 | 14.9 | 1.40 | 64.0 | 13.8 | 0.33 | 60.0 | 3 | 60.0 | 3.25 | 3 | 3 | 5 | 5 | 198 | |
| SD3164 | 62.6 | 35.3 | 53 | 1 | 3 | 18 | 35 | 44 | 57.5 | 82 | 15.7 | 1.48 | 63.0 | 15.0 | 0.36 | 62.5 | 4 | 62.5 | 3.75 | 3 | 5 | 5 | 5 | 212 | |
| SD8089 | 61.2 | 29.7 | 19 | 3 | 3 | 6 | 23 | 68 | 64.3 | 74 | 13.7 | 1.33 | 61.6 | 12.8 | 0.37 | 58.2 | 2 | 58.2 | 3.50 | 3 | 3 | 6 | 5 | 182 | |
| SD8088 | 61.7 | 29.9 | 17 | 4 | 3 | 13 | 31 | 53 | 60.2 | 69 | 14.3 | 1.31 | 62.1 | 13.3 | 0.37 | 57.9 | 2 | 55.8 | 3.50 | 3 | 5 | 5 | 5 | 188 | |
| SD3165 | 61.6 | 34.2 | 40 | 1 | 3 | 11 | 35 | 51 | 59.1 | 85 | 15.9 | 1.46 | 61.0 | 14.8 | 0.38 | 63.4 | 3 | 61.4 | 2.75 | 3 | 3 | 4 | 5 | 200 | |
| SD3161 | 62.1 | 29.4 | 8 | 5 | 1 | 8 | 25 | 66 | 63.8 | 60 | 14.3 | 1.36 | 53.8 | 13.3 | 0.34 | 57.9 | 3 | 55.8 | 5.75 | 3 | 4 | 3 | 5 | 198 | |
| MN91309 | 61.5 | 35.8 | 34 | 2 | 3 | 19 | 38 | 40 | 56.4 | 85 | 15.9 | 1.45 | 59.3 | 14.3 | 0.34 | 61.4 | 3 | 61.4 | 4.25 | 3 | 5 | 3 | 5 | 208 | |
| MN91324 | 61.8 | 31.0 | 35 | 3 | 1 | 3 | 15 | 81 | 68.6 | 91 | 15.4 | 1.48 | 62.0 | 14.6 | 0.38 | 60.5 | 3 | 60.5 | 3.25 | 3 | 3 | 6 | 5 | 208 | |
| SBE0050 | 60.5 | 31.5 | 20 | 4 | 2 | 5 | 25 | 68 | 64.8 | 76 | 14.7 | 1.48 | 52.6 | 13.9 | 0.38 | 58.2 | 3 | 58.2 | 4.75 | 3 | 3 | 3 | 6 | 222 | |
| MN92387 | 61.9 | 35.7 | 65 | 1 | 10 | 31 | 36 | 23 | 49.7 | 76 | 14.8 | 1.45 | 58.4 | 14.2 | 0.32 | 56.2 | 1 | 56.2 | 3.00 | 3 | 5 | 3 | 4 | 208 | |
| ND678 | 62.5 | 30.5 | 32 | 1 | 1 | 4 | 21 | 74 | 67.7 | 89 | 15.5 | 1.41 | 56.1 | 14.5 | 0.33 | 59.6 | 3 | 59.6 | 3.25 | 3 | 5 | 3 | 5 | 209 | |
| ND688 | 60.4 | 35.1 | 66 | 2 | 1 | 5 | 25 | 69 | 65.0 | 91 | 15.5 | 1.50 | 57.4 | 14.6 | 0.37 | 60.0 | 3 | 61.8 | 3.25 | 3 | 0 | 5 | 5 | 204 | |
| SBF0402 | 61.8 | 35.3 | 56 | 2 | 7 | 24 | 37 | 32 | 53.0 | 69 | 15.3 | 1.52 | 55.5 | 14.7 | 0.37 | 60.3 | 4 | 60.3 | 5.00 | 3 | 3 | 5 | 6 | 200 | |
| MT9354 | 59.9 | 32.7 | 28 | 4 | 3 | 3 | 13 | 81 | 68.5 | 85 | 15.5 | 1.56 | 54.2 | 14.3 | 0.39 | 58.6 | 4 | 58.6 | 4.50 | 4 | 3 | 3 | 6 | 202 | |

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 4(cont)

| LOCATION: <i>Minot, ND</i> | | | | | | | | | | | | | | FARGO, ND | | | | | | | | | | | | | |
|----------------------------|---------------|-------------|-----------|-----------|-----------------------|----|----|----------------------|-------------------|-----|---------------------|--------------------|------|------------|------------|-------------|----------------------|--------|--------|--------|---------------------|---|---|-----|--|--|--|
| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS DISTRIBUTION | | | NIR HARD- NESS | WHEAT (14% mb) | | FLOUR EXT (%) | FLOUR (14 % mb) | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C G | C T | LOAF VOL (cc) | | | | | | |
| | | | | | A | B | C | | PRO | ASH | | PRO | ASH | | | | | | | | | | | | | | |
| MT9360 | 61.0 | 31.4 | 11 | 6 | 4 | 19 | 33 | 44 | 56.0 | 75 | 15.3 | 1.63 | 51.9 | 14.9 | 0.39 | 60.8 | 4 | 62.6 | 3.50 | 3 | 4 | 5 | 4 | 192 | | | |
| N89-0562 | 60.5 | 32.8 | 20 | 2 | 1 | 6 | 23 | 70 | 66.0 | 77 | 15.4 | 1.95 | 50.0 | 14.3 | 0.46 | 57.3 | 2 | 57.3 | 4.00 | 3 | 0 | 5 | 5 | 192 | | | |
| N92-2031 | 63.5 | 30.4 | 31 | 3 | 1 | 6 | 25 | 68 | 65.8 | 88 | 16.3 | 1.67 | 57.8 | 15.7 | 0.40 | 60.3 | 3 | 60.3 | 2.50 | 3 | 3 | 5 | 5 | 202 | | | |
| N92-0248 | 60.9 | 27.9 | 41 | 3 | 5 | 17 | 34 | 44 | 57.3 | 72 | 15.5 | 1.68 | 57.9 | 14.7 | 0.37 | 58.6 | 2 | 56.6 | 2.25 | 3 | 3 | 5 | 6 | 192 | | | |
| N92-0434 | 61.8 | 36.2 | 58 | 2 | 3 | 13 | 39 | 45 | 58.1 | 75 | 14.9 | 1.63 | 54.2 | 14.1 | 0.37 | 61.8 | 3 | 61.8 | 3.50 | 3 | 3 | 5 | 6 | 205 | | | |
| FA993-40 | 57.7 | 31.9 | 37 | 5 | 9 | 28 | 32 | 31 | 51.3 | 62 | 14.9 | 1.78 | 54.5 | 14.4 | 0.40 | 59.0 | 2 | 59.0 | 3.00 | 3 | 0 | 3 | 5 | 204 | | | |
| FA993-40 | 58.4 | 28.9 | 18 | 7 | 4 | 10 | 34 | 52 | 59.5 | 65 | 14.3 | 1.72 | 51.9 | 13.7 | 0.40 | 60.8 | 4 | 60.8 | 4.75 | 3 | 3 | 3 | 6 | 198 | | | |
| BW173 | 60.3 | 30.4 | 36 | 4 | 0 | 6 | 24 | 70 | 65.5 | 93 | 16.7 | 1.70 | 58.0 | 16.1 | 0.38 | 62.5 | 3 | 62.5 | 2.50 | 3 | 0 | 6 | 6 | 210 | | | |
| BW191 | 60.3 | 30.5 | 23 | 2 | 5 | 18 | 35 | 42 | 55.7 | 79 | 16.2 | 1.61 | 56.5 | 15.9 | 0.39 | 63.7 | 4 | 63.7 | 3.50 | 3 | 0 | 5 | 6 | 248 | | | |
| HY417 | 62.2 | 38.1 | 52 | 2 | 6 | 24 | 42 | 28 | 52.4 | 62 | 13.9 | 1.49 | 54.8 | 12.9 | 0.37 | 57.3 | 2 | 57.3 | 4.00 | 3 | 3 | 5 | 5 | 192 | | | |
| MN2535 | 63.4 | 30.8 | 14 | 2 | 6 | 13 | 33 | 48 | 61.4 | 72 | 17.5 | 1.77 | 55.7 | 17.3 | 0.35 | 61.4 | 3 | 61.4 | 2.25 | 3 | 0 | 4 | 4 | 190 | | | |

DISTRIBUTION: A= % Soft

B= % Seml-Soft

C= % Seml-Hard

D= % Hard

RATINGS:

DOUGH CHAR (DC):
CRUMB COLOR (CC):
CRUMB GRAIN (CG):
CRUMB TEXTURE (CT):

0

STICKY-WEAK
YELLOW
IRREG, THICK
HARSH

3

PLIABLE
GREY
OPEN, THICK
COARSE

ELASTIC
DULL
CREAMY

BUCKY
BRIGHT WHITE
FINE
SILKY

6

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB
FARGO, ND

Table 5

LOCATION: Prosper, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | NIR HARD- NESS | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | Rating----- | | | | LOAF VOL (cc) |
|----------|---------------|-------------|-----------|-----------|----------------|----|----|----------------------|-----------------|-----------------|------------|-----------------|-----------------|------|------------|------------|-------------|----------------------|--------|-------------|---|---|---|---------------------|
| | | | | | A | B | C | | PRO (14% mb) | ASH (14% mb) | EXT (%) | PRO (14% mb) | ASH (14% mb) | ABS | | | | | | C | C | G | T | |
| Marquis | 57.0 | 28.4 | 23 | 4 | 2 | 9 | 26 | 63 | 65.0 | 75 | 15.4 | 1.91 | 36.8 | 15.2 | 0.46 | 58.6 | 3 | 58.6 | 2.75 | 3 | 3 | 5 | 5 | 192 |
| Chris | 56.5 | 27.2 | 22 | 4 | 2 | 8 | 25 | 65 | 64.8 | 75 | 15.9 | 1.83 | 47.9 | 15.5 | 0.38 | 60.0 | 3 | 60.0 | 2.50 | 3 | 5 | 4 | 5 | 203 |
| Era | 55.3 | 26.4 | 13 | 7 | 1 | 7 | 17 | 75 | 65.5 | 71 | 14.7 | 1.89 | 49.5 | 13.5 | 0.41 | 58.2 | 3 | 58.2 | 3.75 | 3 | 5 | 4 | 5 | 212 |
| Stoa | 54.3 | 26.1 | 11 | 8 | 2 | 3 | 12 | 83 | 71.7 | 79 | 15.3 | 1.96 | 50.5 | 14.4 | 0.41 | 60.3 | 4 | 56.2 | 4.50 | 3 | 4 | 6 | 6 | 200 |
| Butte 86 | 55.8 | 28.8 | 29 | 5 | 2 | 4 | 15 | 79 | 69.1 | 79 | 15.9 | 1.87 | 52.1 | 14.7 | 0.43 | 60.0 | 3 | 60.0 | 3.00 | 3 | 4 | 6 | 6 | 200 |
| SD3151 | 56.4 | 27.8 | 13 | 8 | 1 | 11 | 27 | 61 | 62.0 | 65 | 15.8 | 1.89 | 45.0 | 14.8 | 0.46 | 55.8 | 3 | 57.8 | 5.00 | 3 | 3 | 6 | 6 | 194 |
| SD3156 | 57.5 | 28.8 | 22 | 5 | 4 | 17 | 37 | 42 | 56.7 | 67 | 16.1 | 2.02 | 48.6 | 14.8 | 0.38 | 61.1 | 3 | 59.0 | 3.00 | 3 | 0 | 6 | 5 | 191 |
| SD3164 | 58.7 | 32.4 | 44 | 3 | 1 | 13 | 38 | 48 | 59.0 | 76 | 15.7 | 1.91 | 53.6 | 14.6 | 0.42 | 61.4 | 3 | 61.4 | 3.50 | 3 | 4 | 6 | 6 | 188 |
| SD8089 | 56.2 | 27.0 | 17 | 8 | 1 | 7 | 27 | 65 | 64.6 | 71 | 15.0 | 2.02 | 51.7 | 13.8 | 0.43 | 57.3 | 2 | 57.3 | 3.50 | 3 | 3 | 5 | 6 | 190 |
| SD8088 | 57.3 | 27.3 | 16 | 6 | 1 | 3 | 21 | 75 | 67.4 | 64 | 14.5 | 1.75 | 47.9 | 13.1 | 0.44 | 55.3 | 2 | 57.0 | 3.25 | 2 | 4 | 6 | 4 | 192 |
| SD3165 | 57.4 | 31.6 | 37 | 3 | 1 | 5 | 26 | 68 | 65.4 | 73 | 15.9 | 1.87 | 49.0 | 14.9 | 0.44 | 58.2 | 2 | 60.2 | 3.25 | 2 | 4 | 6 | 5 | 202 |
| SD3161 | 58.4 | 27.7 | 14 | 7 | 2 | 9 | 32 | 57 | 62.0 | 53 | 15.7 | 1.76 | 46.7 | 14.8 | 0.35 | 56.9 | 3 | 56.9 | 4.50 | 3 | 4 | 6 | 6 | 201 |
| MN91309 | 56.2 | 29.1 | 21 | 5 | 3 | 11 | 34 | 52 | 60.2 | 76 | 15.8 | 1.81 | 49.5 | 14.1 | 0.40 | 57.3 | 2 | 57.3 | 3.50 | 3 | 5 | 6 | 6 | 198 |
| MN91324 | 57.4 | 26.8 | 21 | 6 | 2 | 1 | 13 | 84 | 72.2 | 81 | 15.7 | 1.92 | 52.4 | 14.6 | 0.44 | 59.0 | 3 | 61.0 | 3.25 | 3 | 4 | 4 | 6 | 212 |
| SBE0050 | 56.5 | 26.1 | 13 | 8 | 2 | 3 | 16 | 79 | 68.2 | 68 | 14.8 | 1.87 | 48.8 | 13.5 | 0.41 | 56.5 | 2 | 60.2 | 4.75 | 3 | 3 | 4 | 6 | 202 |
| MN92387 | 57.4 | 30.2 | 47 | 1 | 6 | 16 | 40 | 38 | 55.7 | 63 | 15.5 | 2.02 | 49.1 | 14.2 | 0.39 | 55.0 | 1 | 55.0 | 2.75 | 3 | 4 | 5 | 4 | 180 |
| ND678 | 57.6 | 27.0 | 14 | 7 | 0 | 1 | 8 | 91 | 76.5 | 81 | 15.2 | 1.85 | 50.7 | 14.0 | 0.41 | 59.0 | 3 | 59.0 | 3.00 | 3 | 4 | 5 | 5 | 192 |
| ND688 | 55.8 | 29.5 | 36 | 3 | 0 | 3 | 8 | 89 | 73.5 | 77 | 15.8 | 1.95 | 49.8 | 14.3 | 0.43 | 57.6 | 3 | 57.6 | 3.50 | 3 | 4 | 6 | 5 | 163 |
| SBF0402 | 57.9 | 31.7 | 40 | 3 | 3 | 15 | 33 | 49 | 58.6 | 67 | 16.1 | 1.89 | 45.7 | 14.6 | 0.39 | 57.6 | 3 | 57.6 | 4.25 | 3 | 3 | 5 | 6 | 201 |
| MT9354 | 55.0 | 27.9 | 11 | 10 | 2 | 4 | 14 | 80 | 70.2 | 70 | 15.8 | 1.94 | 42.7 | 14.6 | 0.48 | 55.8 | 3 | 57.8 | 5.25 | 3 | 3 | 4 | 6 | 200 |

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Table 5(cont)

LOCATION: Prosper, ND

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS | | | HARDNESS | | NIR | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D | C | C | G | C | T | VOL (cc) |
|----------|---------------|-------------|-----------|-----------|-------|----|----|----------|-------|-----|---------------|------|-----------------|------------|-------|------------------|------------|------------|-------------|----------------------|---|---|---|---|-----|---|-------------|
| | | | | | A | B | C | D | INDEX | | HARD- NESS | PRO | ASH (14% mb) | EXT (%) | FLOUR | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | PRO | ASH (14 % mb) | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MT9360 | 55.3 | 23.8 | 2 | 23 | 4 | 8 | 20 | 68 | 65.1 | 67 | 15.7 | 1.99 | 43.3 | 14.7 | 0.46 | 55.3 | 3 | 57.0 | 4.25 | 3 | 3 | 6 | 5 | 5 | 190 | | |
| N89-0562 | 56.1 | 28.7 | 11 | 7 | 6 | 12 | 21 | 61 | 61.4 | 69 | 16.8 | 2.25 | 44.8 | 15.3 | 0.52 | 57.9 | 2 | 59.8 | 4.00 | 3 | 0 | 3 | 5 | 5 | 192 | | |
| N92-2031 | 58.6 | 30.1 | 27 | 5 | 1 | 3 | 11 | 85 | 70.3 | 88 | 16.8 | 2.01 | 49.8 | 15.8 | 0.46 | 59.6 | 3 | 59.6 | 2.75 | 3 | 3 | 4 | 5 | 5 | 196 | | |
| N92-0248 | 56.8 | 24.1 | 12 | 8 | 0 | 9 | 30 | 61 | 63.9 | 61 | 14.8 | 1.94 | 50.7 | 13.7 | 0.38 | 55.3 | 2 | 55.3 | 3.50 | 3 | 5 | 6 | 5 | 5 | 190 | | |
| N92-0434 | 56.4 | 30.5 | 33 | 2 | 1 | 8 | 22 | 69 | 64.3 | 68 | 15.8 | 1.97 | 45.7 | 14.5 | 0.40 | 59.3 | 3 | 61.0 | 3.75 | 3 | 0 | 6 | 5 | 5 | 203 | | |
| FA993-40 | 53.6 | 26.5 | 13 | 8 | 4 | 12 | 36 | 48 | 58.3 | 61 | 15.7 | 1.92 | 43.6 | 14.5 | 0.42 | 56.9 | 2 | 58.6 | 3.25 | 3 | 3 | 6 | 5 | 5 | 198 | | |
| FA993-40 | 54.9 | 26.2 | 12 | 6 | 5 | 19 | 35 | 41 | 55.8 | 77 | 16.1 | 1.82 | 50.7 | 14.7 | 0.40 | 61.4 | 3 | 61.4 | 2.75 | 3 | 0 | 6 | 4 | 4 | 173 | | |
| BW173 | 57.5 | 28.3 | 19 | 4 | 1 | 3 | 12 | 84 | 69.9 | 87 | 16.6 | 1.92 | 53.6 | 15.4 | 0.41 | 61.1 | 3 | 63.0 | 3.00 | 3 | 3 | 5 | 6 | 6 | 216 | | |
| BW191 | 55.5 | 29.7 | 39 | 2 | 13 | 15 | 25 | 47 | 55.6 | 82 | 16.7 | 1.86 | 54.1 | 15.5 | 0.45 | 55.8 | 2 | 57.8 | 3.50 | 2 | 0 | 4 | 6 | 6 | 202 | | |
| HY417 | 57.2 | 27.9 | 12 | 9 | 3 | 16 | 33 | 48 | 57.5 | 58 | 13.3 | 1.78 | 47.6 | 12.0 | 0.38 | 55.0 | 3 | 59.0 | 5.75 | 3 | 4 | 6 | 6 | 6 | 198 | | |
| MN2535 | 61.0 | 25.7 | 4 | 9 | 1 | 6 | 29 | 64 | 65.8 | 74 | 16.8 | 1.92 | 48.6 | 15.8 | 0.39 | 57.3 | 2 | 59.0 | 3.50 | 3 | 0 | 4 | 5 | 5 | 200 | | |

DISTRIBUTION: A= % Soft

B= % Seml-Soft

C= % Seml-Hard

D= % Hard

| | | 0 | | 3 | | 6 | |
|----------|---------------------|--------------|---------|-------------|--------------|---|--|
| RATINGS: | DOUGH CHAR (DC): | STICKY-WEAK | PLIABLE | ELASTIC | BUCKY | | |
| | CRUMB COLOR (CC): | YELLOW | GREY | DULL | BRIGHT WHITE | | |
| | CRUMB GRAIN (CG): | IRREG, THICK | | OPEN, THICK | FINE | | |
| | CRUMB TEXTURE (CT): | HARSH | | COARSE | SILKY | | |
| | | | | | | | |

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Table 6

FARGO, ND

LOCATION: *Brookings, SD*

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | | NIR HARD- NESS | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | Rating | | | | LOAF VOL (cc) |
|----------|---------------|-------------|-----------|-----------|----------------|----|----|----|----------------------|-------|------|-----------------|------------|-------|------|------------|------------|-------------|----------------------|--------|--------|------------------|---|-------|---------------------|
| | | | | | A | B | C | D | | INDEX | PRO | ASH (14% mb) | EXT (%) | FLOUR | | | | | | | PRO | ASH (14 % mb) | | | |
| | | | | | | | | | | | | | | C | G | | | | | | | | T | ----- | |
| Marquis | 55.5 | 22.4 | 2 | 8 | 1 | 3 | 11 | 85 | 79.7 | 74 | 12.1 | 1.78 | 61.6 | 10.9 | 0.45 | 49.9 | 2 | 51.8 | 5.25 | 1 | 5 | 6 | 2 | 163 | |
| Chris | 60.3 | 26.2 | 15 | 3 | 1 | 5 | 19 | 75 | 71.9 | 79 | 13.8 | 1.81 | 59.4 | 13.2 | 0.41 | 54.3 | 2 | 56.2 | 4.50 | 2 | 6 | 4 | 4 | 195 | |
| Era | 58.6 | 26.4 | 16 | 6 | 0 | 5 | 21 | 74 | 73.8 | 72 | 12.6 | 1.67 | 58.5 | 11.2 | 0.37 | 52.2 | 2 | 56.2 | 5.50 | 3 | 5 | 4 | 4 | 181 | |
| Stoa | 59.5 | 29.2 | 24 | 2 | 1 | 4 | 21 | 74 | 69.2 | 75 | 13.0 | 1.75 | 54.0 | 11.9 | 0.34 | 55.3 | 3 | 59.1 | 5.75 | 3 | 3 | 4 | 4 | 181 | |
| Butte 86 | 60.9 | 34.6 | 55 | 1 | 2 | 12 | 42 | 44 | 59.9 | 79 | 13.5 | 1.80 | 55.2 | 12.0 | 0.35 | 56.2 | 2 | 54.2 | 4.25 | 2 | 4 | 5 | 4 | 162 | |
| SD3151 | 61.3 | 31.4 | 32 | 2 | 1 | 14 | 38 | 47 | 60.4 | 72 | 13.4 | 1.79 | 52.6 | 12.4 | 0.43 | 53.2 | 2 | 55.0 | 5.50 | 2 | 3 | 5 | 4 | 178 | |
| SD3156 | 62.2 | 32.6 | 52 | 2 | 5 | 17 | 35 | 43 | 56.7 | 68 | 12.6 | 1.83 | 55.9 | 11.1 | 0.34 | 54.6 | 2 | 54.6 | 4.75 | 2 | 4 | 5 | 4 | 168 | |
| SD3164 | 61.6 | 31.8 | 48 | 1 | 1 | 7 | 35 | 57 | 68.0 | 68 | 13.4 | 1.83 | 54.5 | 12.5 | 0.40 | 56.5 | 3 | 58.2 | 5.50 | 2 | 4 | 6 | 5 | 186 | |
| SD8089 | 60.3 | 29.5 | 26 | 4 | 2 | 16 | 36 | 46 | 59.9 | 77 | 12.2 | 1.72 | 56.3 | 10.7 | 0.39 | 54.3 | 2 | 56.2 | 5.75 | 2 | 4 | 6 | 4 | 178 | |
| SD8088 | 59.9 | 28.7 | 16 | 4 | 1 | 10 | 35 | 54 | 61.9 | 69 | 12.4 | 1.73 | 50.7 | 10.9 | 0.41 | 53.2 | 2 | 55.0 | 6.25 | 3 | 3 | 6 | 5 | 183 | |
| SD3165 | 61.8 | 36.5 | 54 | 1 | 2 | 14 | 45 | 39 | 57.2 | 75 | 13.4 | 1.84 | 46.0 | 12.2 | 0.43 | 56.9 | 2 | 56.9 | 4.75 | 3 | 0 | 6 | 6 | 182 | |
| SD3161 | 61.6 | 30.8 | 25 | 4 | 4 | 17 | 41 | 38 | 56.4 | 53 | 12.2 | 1.77 | 45.8 | 11.0 | 0.37 | 52.9 | 2 | 56.6 | 7.25 | 2 | 0 | 5 | 5 | 162 | |
| MN91309 | 59.4 | 32.4 | 24 | 3 | 5 | 22 | 34 | 39 | 59.0 | 69 | 12.9 | 1.71 | 45.0 | 11.8 | 0.39 | 58.2 | 4 | 58.2 | 4.75 | 3 | 4 | 6 | 5 | 180 | |
| MN91324 | 60.5 | 31.5 | 37 | 3 | 2 | 11 | 29 | 58 | 62.1 | 79 | 13.2 | 1.79 | 49.1 | 11.8 | 0.43 | 58.6 | 3 | 58.6 | 4.25 | 3 | 4 | 6 | 5 | 183 | |
| SBE0050 | 59.0 | 26.7 | 6 | 6 | 0 | 3 | 19 | 78 | 68.2 | 64 | 12.5 | 1.66 | 38.4 | 11.6 | 0.40 | 55.0 | 3 | 57.0 | 6.25 | 3 | 3 | 5 | 6 | 180 | |
| MN92387 | 60.9 | 33.8 | 60 | 1 | 3 | 18 | 37 | 42 | 57.1 | 69 | 13.2 | 1.77 | 40.6 | 12.5 | 0.35 | 53.5 | 2 | 53.4 | 3.75 | 3 | 3 | 3 | 4 | 175 | |
| ND678 | 61.3 | 29.6 | 21 | 2 | 0 | 2 | 18 | 80 | 73.4 | 85 | 13.4 | 1.79 | 37.2 | 12.2 | 0.34 | 58.2 | 3 | 60.2 | 4.25 | 3 | 6 | 3 | 4 | 188 | |
| ND688 | 60.1 | 32.5 | 58 | 2 | 0 | 5 | 29 | 66 | 65.0 | 82 | 13.6 | 1.72 | 41.5 | 12.0 | 0.37 | 56.5 | 3 | 58.2 | 5.00 | 3 | 5 | 5 | 5 | 183 | |
| SBF0402 | 60.9 | 33.9 | 45 | 2 | 5 | 21 | 40 | 34 | 55.2 | 74 | 13.7 | 1.77 | 41.5 | 12.9 | 0.38 | 55.8 | 3 | 57.8 | 6.75 | 3 | 4 | 6 | 6 | 198 | |
| MT9354 | 56.4 | 27.9 | 8 | 10 | 1 | 3 | 16 | 80 | 74.3 | 78 | 14.9 | 1.87 | 40.4 | 14.4 | 0.40 | 59.3 | 5 | 61.0 | 5.75 | 3 | 5 | 6 | 6 | 204 | |

Table 6(cont)

FARGO, ND

| DISTRIBUTION: A= % Soft | | RATINGS: | | | |
|-------------------------|---------------------|--------------|---------|-------------|--------------|
| | | 0 | 3 | 6 | |
| B= % Seml-Soft | DOUGH CHAR (DC): | STICKY-WEAK | PLIABLE | ELASTIC | BUCKY |
| C= % Seml-Hard | CRUMB COLOR (CC): | YELLOW | GREY | DULL | BRIGHT WHITE |
| | CRUMB GRAIN (CG): | IRREG, THICK | | OPEN, THICK | FINE |
| D= % Hard | CRUMB TEXTURE (CT): | HARSH | | COARSE | SILKY |

D= % Hard

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 7

FARGO, ND

LOCATION: Grotton, SD

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | | NIR | | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C | | | | | LOAF VOL (cc) | |
|----------|---------------|-------------|-----------|-----------|----------------|----|----|----|---------------|-----|-----------------|------------|-------|------|-------|------------------|------------|------------|-------------|----------------------|--------|---|---|---|---|-----|---------------------|-----------------|
| | | | | | DISTRIBUTION | | | | HARD- NESS | PRO | ASH (14% mb) | EXT (%) | FLOUR | | PRO | ASH (14 % mb) | | | | | | C | C | C | G | T | | |
| | | | | | A | B | C | D | | | | | INDEX | PRO | | | | | | | | | | | | | | ASH (14% mb) |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Marquis | 58.6 | 22.6 | 2 | 10 | 1 | 0 | 3 | 96 | 88.0 | 78 | 12.5 | 1.61 | 55.6 | 11.3 | 0.37 | 55.3 | 2 | 57.1 | 4.50 | 2 | 4 | 4 | 4 | 4 | 4 | 166 | | |
| Chris | 61.4 | 27.5 | 11 | 4 | 3 | 7 | 24 | 66 | 69.5 | 76 | 14.2 | 1.61 | 54.9 | 13.5 | 0.36 | 56.5 | 2 | 58.5 | 4.50 | 3 | 3 | 5 | 5 | 5 | 5 | 194 | | |
| Era | 60.3 | 27.8 | 11 | 7 | 1 | 4 | 19 | 76 | 68.6 | 78 | 12.6 | 1.72 | 56.6 | 11.3 | 0.41 | 54.3 | 2 | 58.5 | 5.00 | 2 | 5 | 3 | 4 | 4 | 4 | 172 | | |
| Stoa | 61.6 | 29.2 | 17 | 4 | 0 | 3 | 20 | 77 | 68.3 | 75 | 13.3 | 1.74 | 55.9 | 12.6 | 0.36 | 56.5 | 2 | 58.5 | 6.00 | 3 | 3 | 6 | 5 | 5 | 5 | 192 | | |
| Butte 86 | 62.9 | 33.2 | 42 | 2 | 1 | 3 | 22 | 74 | 67.3 | 87 | 13.7 | 1.60 | 57.7 | 12.3 | 0.33 | 58.6 | 2 | 60.3 | 3.00 | 2 | 3 | 3 | 6 | 6 | 6 | 187 | | |
| SD3151 | 62.7 | 31.7 | 20 | 2 | 0 | 2 | 15 | 83 | 71.0 | 78 | 14.8 | 1.71 | 50.7 | 14.1 | 0.41 | 56.2 | 2 | 58.5 | 5.25 | 2 | 3 | 3 | 6 | 6 | 6 | 189 | | |
| SD3156 | 64.6 | 31.0 | 36 | 2 | 0 | 3 | 24 | 73 | 68.8 | 70 | 13.3 | 1.74 | 55.9 | 12.2 | 0.33 | 55.5 | 2 | 57.0 | 4.50 | 2 | 3 | 5 | 6 | 6 | 6 | 176 | | |
| SD3164 | 64.2 | 32.2 | 40 | 2 | 1 | 3 | 28 | 68 | 71.1 | 76 | 14.2 | 1.65 | 53.3 | 13.5 | 0.36 | 59.0 | 3 | 61.3 | 5.00 | 3 | 5 | 5 | 6 | 6 | 6 | 208 | | |
| SD8089 | 61.6 | 29.5 | 16 | 5 | 0 | 6 | 26 | 68 | 64.4 | 76 | 13.5 | 1.53 | 53.7 | 12.4 | 0.37 | 56.9 | 2 | 58.5 | 4.50 | 2 | 3 | 4 | 6 | 6 | 6 | 191 | | |
| SD8088 | 62.2 | 28.1 | 11 | 6 | 0 | 4 | 14 | 82 | 71.3 | 71 | 13.9 | 1.59 | 48.8 | 12.8 | 0.39 | 56.2 | 2 | 57.7 | 5.00 | 2 | 3 | 5 | 5 | 5 | 5 | 203 | | |
| SD3165 | 62.8 | 34.9 | 43 | 1 | 1 | 6 | 32 | 61 | 64.3 | 79 | 14.5 | 1.66 | 51.7 | 13.7 | 0.39 | 60.5 | 3 | 60.5 | 3.75 | 3 | 3 | 3 | 6 | 6 | 6 | 210 | | |
| SD3161 | 63.2 | 29.5 | 7 | 6 | 1 | 3 | 26 | 70 | 66.2 | 54 | 13.0 | 1.48 | 44.9 | 12.5 | 0.37 | 57.6 | 3 | 58.5 | 6.00 | 3 | 3 | 4 | 5 | 5 | 5 | 190 | | |
| MN91309 | 60.6 | 32.2 | 14 | 5 | 2 | 7 | 23 | 68 | 66.8 | 73 | 13.4 | 1.57 | 48.4 | 12.6 | 0.38 | 60.3 | 4 | 60.3 | 5.00 | 3 | 5 | 3 | 5 | 5 | 5 | 198 | | |
| MN91324 | 62.8 | 30.4 | 20 | 4 | 1 | 2 | 16 | 81 | 71.3 | 83 | 13.5 | 1.61 | 49.3 | 12.1 | 0.39 | 59.3 | 3 | 59.3 | 4.00 | 2 | 3 | 6 | 5 | 5 | 5 | 184 | | |
| SBE0050 | 61.4 | 28.3 | 5 | 7 | 1 | 1 | 19 | 79 | 69.8 | 65 | 13.3 | 1.49 | 38.8 | 12.5 | 0.41 | 57.6 | 5 | 58.5 | 7.00 | 3 | 5 | 4 | 5 | 5 | 5 | 197 | | |
| MN92387 | 63.4 | 32.9 | 51 | 0 | 1 | 15 | 42 | 42 | 58.1 | 72 | 13.2 | 1.65 | 47.4 | 12.7 | 0.35 | 55.8 | 2 | 61.3 | 3.50 | 2 | 3 | 6 | 5 | 5 | 5 | 190 | | |
| ND678 | 63.4 | 30.4 | 17 | 3 | 1 | 0 | 21 | 78 | 70.9 | 93 | 14.5 | 1.62 | 49.1 | 13.4 | 0.34 | 60.3 | 3 | 60.3 | 3.50 | 3 | 5 | 5 | 6 | 6 | 6 | 200 | | |
| ND688 | 62.6 | 32.6 | 47 | 2 | 0 | 2 | 21 | 77 | 67.5 | 86 | 13.8 | 1.51 | 52.4 | 12.5 | 0.32 | 57.6 | 3 | 59.2 | 4.25 | 2 | 3 | 6 | 5 | 5 | 5 | 180 | | |
| SBF0402 | 63.0 | 31.8 | 39 | 3 | 2 | 15 | 34 | 49 | 60.9 | 69 | 13.4 | 1.59 | 49.3 | 13.0 | 0.37 | 57.9 | 4 | 59.7 | 7.50 | 3 | 3 | 3 | 5 | 5 | 5 | 186 | | |
| MT9354 | 59.0 | 28.7 | 5 | 9 | 1 | 4 | 13 | 82 | 74.0 | 79 | 14.5 | 1.70 | 46.9 | 13.7 | 0.40 | 57.6 | 5 | 59.7 | 6.00 | 3 | 3 | 5 | 6 | 6 | 6 | 203 | | |

**USDA / ARS
WHEAT QUALITY LAB**

LOCATION: Groton, SD

| DISTRIBUTION: A= % Soft | | 0 _____ 3 _____ 6 | | | | |
|-------------------------|----------|---------------------|--------------|---------|-------------|--------------|
| B= % Seml-Soft | RATINGS: | DOUGH CHAR (DC): | STICKY-WEAK | PLIABLE | ELASTIC | BUCKY |
| C= % Seml-Hard | | CRUMB COLOR (CC): | YELLOW | GREY | DULL | BRIGHT WHITE |
| D= % Hard | | CRUMB GRAIN (CG): | IRREG, THICK | | OPEN, THICK | FINE |
| | | CRUMB TEXTURE (CT): | HARSH | | COARSE | SILKY |

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USDA / ARS
WHEAT QUALITY LAB

Table 8

LOCATION: *Morris, MN*

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS | | | HARDNESS | | NIR | WHEAT | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D | Rating | | | | | LOAF VOL (cc) |
|----------|---------------|-------------|-----------|-----------|-------|----|----|----------|-------|-----|-----------------|-----------------|------------|-----------------|------------|------------|-------------|----------------------|------|--------|---|---|---|---|---------------------|
| | | | | | A | B | C | D | INDEX | | PRO (14% mb) | ASH (14% mb) | EXT (%) | PRO (14% mb) | | | | | | C | C | C | G | T | |
| Marquis | 55.7 | 29.5 | 38 | 2 | 5 | 16 | 27 | 52 | 59.2 | 70 | 14.9 | 1.94 | 51.4 | 13.5 | 0.47 | 55.0 | 2 | 55.0 | 3.50 | 3 | 4 | 6 | 4 | 4 | 178 |
| Chris | 57.1 | 26.4 | 22 | 5 | 3 | 3 | 17 | 77 | 68.3 | 71 | 16.1 | 1.78 | 54.8 | 14.8 | 0.43 | 56.5 | 2 | 58.2 | 2.50 | 3 | 4 | 4 | 5 | 5 | 212 |
| Era | 55.8 | 25.8 | 15 | 5 | 1 | 3 | 10 | 86 | 73.2 | 66 | 14.0 | 1.84 | 54.3 | 12.3 | 0.42 | 52.9 | 1 | 52.9 | 4.00 | 3 | 4 | 6 | 4 | 4 | 216 |
| Stoa | 56.9 | 28.2 | 28 | 5 | 0 | 3 | 11 | 86 | 72.5 | 76 | 15.3 | 1.85 | 56.4 | 14.1 | 0.41 | 57.6 | 3 | 59.4 | 4.00 | 3 | 4 | 6 | 5 | 5 | 192 |
| Butte 86 | 56.8 | 30.8 | 44 | 2 | 1 | 6 | 26 | 67 | 67.7 | 76 | 15.4 | 1.80 | 58.5 | 13.7 | 0.38 | 56.2 | 2 | 58.2 | 4.00 | 3 | 3 | 3 | 5 | 5 | 188 |
| SD3151 | 58.0 | 30.2 | 29 | 2 | 1 | 5 | 21 | 73 | 65.9 | 61 | 16.1 | 1.82 | 53.3 | 14.5 | 0.43 | 53.5 | 2 | 63.4 | 5.25 | 3 | 0 | 3 | 6 | 6 | 182 |
| SD3156 | 59.1 | 30.8 | 36 | 3 | 1 | 8 | 36 | 55 | 60.7 | 69 | 14.6 | 1.86 | 56.5 | 13.3 | 0.34 | 57.3 | 4 | 59.0 | 4.50 | 3 | 3 | 5 | 6 | 6 | 203 |
| SD3164 | 59.5 | 31.4 | 45 | 2 | 0 | 8 | 26 | 66 | 64.8 | 85 | 15.7 | 1.78 | 54.7 | 14.3 | 0.37 | 60.0 | 5 | 60.0 | 5.00 | 3 | 4 | 5 | 6 | 6 | 208 |
| SD8089 | 57.8 | 29.8 | 34 | 3 | 0 | 6 | 25 | 69 | 64.2 | 69 | 14.0 | 1.67 | 56.6 | 12.5 | 0.39 | 55.3 | 2 | 57.0 | 4.50 | 3 | 5 | 6 | 4 | 4 | 186 |
| SD8088 | 57.8 | 28.3 | 19 | 3 | 1 | 1 | 21 | 77 | 66.4 | 72 | 14.1 | 1.62 | 54.5 | 12.4 | 0.39 | 55.0 | 3 | 57.0 | 5.50 | 3 | 3 | 5 | 5 | 5 | 198 |
| SD3165 | 59.4 | 33.6 | 39 | 1 | 1 | 6 | 27 | 66 | 64.0 | 78 | 15.2 | 1.84 | 53.6 | 13.6 | 0.38 | 57.3 | 4 | 61.0 | 4.50 | 3 | 4 | 4 | 5 | 5 | 200 |
| SD3161 | 59.4 | 28.5 | 9 | 6 | 1 | 4 | 11 | 84 | 68.9 | 60 | 14.8 | 1.68 | 49.5 | 13.2 | 0.38 | 54.6 | 3 | 60.6 | 6.75 | 3 | 4 | 4 | 5 | 5 | 190 |
| MN91309 | 57.6 | 31.4 | 25 | 3 | 3 | 9 | 30 | 58 | 61.4 | 76 | 14.7 | 1.74 | 55.7 | 13.4 | 0.40 | 59.6 | 4 | 61.4 | 5.25 | 3 | 5 | 5 | 6 | 6 | 200 |
| MN91324 | 58.5 | 28.3 | 25 | 4 | 2 | 1 | 9 | 88 | 73.6 | 83 | 15.1 | 1.77 | 56.9 | 13.3 | 0.44 | 59.6 | 4 | 61.4 | 4.00 | 3 | 4 | 5 | 5 | 5 | 198 |
| SBE0050 | 57.5 | 30.1 | 19 | 4 | 1 | 3 | 15 | 81 | 68.7 | 65 | 14.3 | 1.78 | 49.1 | 12.8 | 0.42 | 56.2 | 3 | 60.2 | 6.00 | 3 | 3 | 3 | 6 | 6 | 200 |
| MN92387 | 58.6 | 32.6 | 60 | 4 | 2 | 11 | 31 | 56 | 60.1 | 72 | 14.8 | 2.07 | 55.7 | 13.2 | 0.40 | 53.2 | 1 | 59.0 | 3.75 | 3 | 3 | 5 | 4 | 4 | 176 |
| ND678 | 56.6 | 29.1 | 21 | 7 | 1 | 1 | 8 | 90 | 74.0 | 78 | 15.2 | 1.84 | 49.5 | 13.4 | 0.40 | 56.5 | 2 | 58.2 | 3.25 | 2 | 4 | 3 | 4 | 4 | 192 |
| ND688 | 56.1 | 28.9 | 40 | 4 | 1 | 3 | 10 | 86 | 75.4 | 80 | 15.1 | 1.74 | 52.8 | 13.2 | 0.41 | 55.5 | 2 | 59.4 | 3.25 | 2 | 0 | 6 | 4 | 4 | 170 |
| SBF0402 | 58.0 | 30.4 | 40 | 4 | 1 | 6 | 29 | 64 | 64.4 | 70 | 15.4 | 1.63 | 54.9 | 14.1 | 0.37 | 56.2 | 4 | 62.2 | 5.75 | 3 | 0 | 3 | 6 | 6 | 203 |
| MT9354 | 51.4 | 24.8 | 9 | 19 | 4 | 6 | 13 | 77 | 70.3 | 68 | 16.0 | 1.98 | 50.5 | 14.3 | 0.52 | 55.8 | 3 | 57.8 | 4.75 | 2 | 0 | 6 | 5 | 5 | 203 |

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Table 8(cont)

LOCATION: Morris, MN

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | | NIR HARD- NESS | WHEAT | | FLOUR EXT (%) | FLOUR | | MIX ABS PAT | BAKE ABS TIME (min) | MIX TIME (min) | D C | C C | C G | C T | LOAF VOL (cc) | | |
|----------|---------------|-------------|-----------|-----------|----------------|----|----|----|----------------------|-------|-----------------|---------------------|-------|------------------|-------------------|------------------------------|----------------------|--------|--------|--------|--------|---------------------|---|-----|
| | | | | | DISTRIBUTION | | | | | PRO | ASH (14% mb) | | PRO | ASH (14 % mb) | | | | | | | | | | |
| | | | | | A | B | C | D | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| MT9360 | 55.8 | 26.2 | 7 | 14 | 4 | 8 | 24 | 64 | 63.7 | 67 | 15.7 | 1.94 | 47.6 | 14.4 | 0.42 | 54.6 | 2 | 58.6 | 5.00 | 3 | 0 | 6 | 4 | 200 |
| N89-0562 | 55.8 | 29.0 | 13 | 6 | 0 | 2 | 11 | 87 | 72.2 | 69 | 16.5 | 2.16 | 49.3 | 15.3 | 0.49 | 56.2 | 3 | 60.2 | 5.00 | 3 | 0 | 3 | 6 | 202 |
| N92-2031 | 61.0 | 30.7 | 45 | 2 | 0 | 1 | 10 | 89 | 72.9 | 79 | 15.9 | 1.80 | 54.3 | 14.1 | 0.40 | 55.0 | 2 | 59.0 | 5.00 | 3 | 4 | 6 | 5 | 188 |
| N92-0248 | 58.8 | 28.1 | 18 | 7 | 3 | 16 | 36 | 45 | 57.2 | 65 | 14.4 | 1.82 | 53.6 | 12.9 | 0.38 | 53.5 | 1 | 55.4 | 3.50 | 2 | 4 | 3 | 4 | 175 |
| N92-0434 | 56.5 | 30.5 | 36 | 4 | 4 | 6 | 26 | 64 | 62.8 | 61 | 14.8 | 1.73 | 51.4 | 13.5 | 0.42 | 55.8 | 2 | 59.8 | 4.00 | 3 | 0 | 6 | 5 | 182 |
| FA993-40 | 53.0 | 27.8 | 23 | 6 | 3 | 14 | 30 | 53 | 60.0 | 57 | 15.2 | 1.79 | 49.1 | 13.5 | 0.45 | 55.3 | 2 | 57.0 | 3.75 | 3 | 0 | 6 | 4 | 192 |
| FA993-40 | 54.4 | 30.3 | 28 | 5 | 2 | 16 | 36 | 46 | 58.5 | 61 | 15.3 | 1.80 | 58.6 | 13.8 | 0.40 | 60.3 | 3 | 62.2 | 3.25 | 3 | 0 | 6 | 4 | 192 |
| BW173 | 58.7 | 31.2 | 46 | 2 | 0 | 4 | 22 | 74 | 66.0 | 88 | 16.4 | 1.77 | 57.6 | 14.8 | 0.39 | 59.0 | 3 | 61.0 | 3.25 | 3 | 0 | 6 | 6 | 214 |
| BW191 | 55.7 | 32.7 | 55 | 1 | 3 | 11 | 37 | 49 | 58.9 | 75 | 16.3 | 1.91 | 57.6 | 14.8 | 0.44 | 59.0 | 3 | 59.0 | 3.25 | 3 | 3 | 5 | 6 | 182 |
| HY417 | 53.5 | 28.0 | 20 | 10 | 7 | 17 | 40 | 36 | 54.4 | 42 | 13.0 | 1.86 | 51.4 | 11.6 | 0.42 | 53.2 | 2 | 59.0 | 5.75 | 2 | 4 | 5 | 5 | 172 |

DISTRIBUTION: A= % Soft

B= % Seml-Soft

C= % Seml-Hard

D= % Hard

RATINGS:

DOUGH CHAR (DC):

CRUMB COLOR (CC):

CRUMB GRAIN (CG):

CRUMB TEXTURE (CT):

0

3

6

STICKY-WEAK

YELLOW

IRREG, THICK

HARSH

PLIABLE

GREY

OPEN, THICK

COARSE

ELASTIC

DULL

CREAMY

BUCKY

BRIGHT WHITE

FINE

SILKY

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Table 9

| LOCATION: <i>Selby, SD</i> | | | | | | | | | | FARGO, ND | | | | | | | | | | | | | | | |
|----------------------------|---------------|-------------|-----------|-----------|----------------|----|----|----|----------------------|-----------|-----------------|------------|------|------------------|------|------------|-------------|----------------------|------|-------------|---|---|-------|---------------------|-----|
| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | | NIR HARD- NESS | WHEAT | | FLOUR | | FLOUR | | MIX PAT | BAKE ABS | MIX TIME (min) | D | Rating----- | | | | LOAF VOL (cc) | |
| | | | | | DISTRIBUTION | | | | | PRO | ASH (14% mb) | EXT (%) | PRO | ASH (14 % mb) | C | | | | | C | G | T | | | |
| | | | | | A | B | C | D | | | | | | | | | | | | | | | INDEX | | |
| Marquis | 58.5 | 23.2 | 6 | 12 | 0 | 1 | 5 | 94 | 91.9 | 82 | 12.7 | 1.67 | 60.3 | 11.7 | 0.44 | 54.3 | 2 | 56.2 | 5.25 | 2 | 3 | 4 | 4 | 4 | 176 |
| Chris | 59.4 | 24.6 | 9 | 11 | 1 | 5 | 13 | 81 | 79.8 | 81 | 14.1 | 1.68 | 61.5 | 13.4 | 0.42 | 56.9 | 3 | 58.6 | 4.50 | 3 | 5 | 4 | 4 | 4 | 192 |
| Era | 57.8 | 24.7 | 7 | 15 | 2 | 4 | 10 | 84 | 76.7 | 78 | 12.6 | 1.81 | 55.8 | 11.4 | 0.43 | 54.3 | 3 | 56.2 | 6.25 | 2 | 5 | 3 | 4 | 4 | 183 |
| Stoa | 58.2 | 27.1 | 12 | 12 | 2 | 2 | 10 | 86 | 74.1 | 71 | 13.1 | 1.70 | 56.8 | 12.5 | 0.40 | 57.6 | 4 | 60.5 | 5.25 | 3 | 3 | 3 | 5 | 5 | 194 |
| Butte 86 | 61.4 | 30.7 | 29 | 4 | 1 | 4 | 23 | 72 | 72.4 | 81 | 13.7 | 1.70 | 57.9 | 12.6 | 0.36 | 57.9 | 3 | 60.5 | 4.00 | 3 | 5 | 3 | 5 | 5 | 193 |
| SD3151 | 60.6 | 26.8 | 6 | 9 | 1 | 1 | 7 | 91 | 78.8 | 68 | 14.1 | 2.00 | 48.1 | 13.6 | 0.44 | 55.5 | 3 | 58.5 | 6.50 | 3 | 3 | 4 | 5 | 5 | 193 |
| SD3156 | 62.4 | 28.5 | 17 | 7 | 1 | 7 | 20 | 72 | 70.6 | 63 | 13.0 | 1.65 | 54.7 | 12.4 | 0.34 | 56.9 | 3 | 58.5 | 4.50 | 3 | 3 | 3 | 5 | 5 | 194 |
| SD3164 | 62.0 | 29.0 | 20 | 9 | 1 | 4 | 17 | 78 | 72.8 | 74 | 13.9 | 2.13 | 53.5 | 13.2 | 0.40 | 60.0 | 5 | 62.4 | 5.50 | 3 | 5 | 5 | 6 | 6 | 204 |
| SD8089 | 59.7 | 26.6 | 10 | 12 | 4 | 13 | 28 | 55 | 61.9 | 72 | 12.9 | 1.63 | 51.2 | 12.1 | 0.38 | 58.2 | 3 | 60.5 | 4.50 | 3 | 3 | 4 | 5 | 5 | 197 |
| SD8088 | 60.8 | 26.5 | 8 | 13 | 1 | 3 | 18 | 78 | 69.5 | 67 | 13.2 | 1.64 | 50.2 | 12.3 | 0.41 | 57.6 | 3 | 59.7 | 5.00 | 3 | 5 | 6 | 6 | 6 | 200 |
| SD3165 | 61.3 | 30.7 | 17 | 7 | 2 | 5 | 26 | 67 | 66.4 | 76 | 13.6 | 1.80 | 49.8 | 13.0 | 0.37 | 59.6 | 3 | 61.8 | 4.00 | 3 | 3 | 3 | 6 | 6 | 210 |
| SD3161 | 60.4 | 26.7 | 2 | 15 | 4 | 6 | 19 | 71 | 68.0 | 60 | 13.3 | 1.60 | 40.7 | 12.6 | 0.34 | 56.2 | 3 | 56.2 | 6.50 | 3 | 3 | 4 | 4 | 4 | 193 |
| MN91309 | 60.6 | 30.2 | 11 | 9 | 2 | 7 | 24 | 67 | 72.4 | 76 | 13.5 | 1.60 | 45.5 | 12.9 | 0.33 | 60.8 | 5 | 62.6 | 5.50 | 3 | 3 | 5 | 6 | 6 | 202 |
| MN91324 | 60.7 | 26.7 | 8 | 13 | 1 | 2 | 6 | 91 | 79.0 | 84 | 13.9 | 1.76 | 46.5 | 13.1 | 0.42 | 60.8 | 4 | 62.5 | 4.50 | 3 | 3 | 5 | 5 | 5 | 212 |
| SBE0050 | 59.2 | 26.4 | 3 | 15 | 2 | 1 | 12 | 85 | 72.4 | 63 | 13.0 | 1.68 | 35.5 | 12.8 | 0.42 | 59.0 | 5 | 60.9 | 7.00 | 3 | 6 | 3 | 5 | 5 | 205 |
| MN92387 | 61.1 | 31.7 | 35 | 7 | 4 | 11 | 34 | 51 | 60.1 | 68 | 13.4 | 1.88 | 39.8 | 13.2 | 0.34 | 58.2 | 3 | 60.0 | 4.00 | 3 | 5 | 3 | 5 | 5 | 194 |
| ND678 | 61.3 | 28.8 | 13 | 8 | 3 | 3 | 13 | 81 | 74.7 | 83 | 14.0 | 1.64 | 48.1 | 13.3 | 0.35 | 62.1 | 4 | 63.9 | 4.00 | 3 | 6 | 3 | 6 | 6 | 214 |
| ND688 | 58.4 | 29.1 | 26 | 10 | 2 | 3 | 15 | 80 | 74.1 | 85 | 13.8 | 1.66 | 50.2 | 12.8 | 0.40 | 59.6 | 4 | 61.6 | 4.00 | 3 | 3 | 5 | 6 | 6 | 209 |
| SBF0402 | 59.9 | 30.6 | 25 | 7 | 4 | 15 | 30 | 51 | 64.0 | 70 | 14.1 | 1.69 | 50.2 | 13.9 | 0.35 | 58.2 | 5 | 60.5 | 6.50 | 3 | 5 | 3 | 5 | 5 | 210 |
| MT9354 | 56.2 | 25.4 | 3 | 25 | 2 | 3 | 7 | 88 | 85.2 | 80 | 14.7 | 1.85 | 54.5 | 13.8 | 0.45 | 58.2 | 4 | 60.5 | 5.00 | 3 | 3 | 5 | 6 | 6 | 202 |

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Table 9(cont)

LOCATION: Selby, SD

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | NIR | | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | Rating----- | | | | | | LOAF VOL (cc) |
|----------|---------------|-------------|-----------|-----------|----------------|----|----|---------------|------|-----------------|------------|-------|------------------|-------|------|------------|------------|-------------|----------------------|--------|-------------|---|---|---|-----|--|---------------------|
| | | | | | DISTRIBUTION | | | HARD- NESS | PRO | ASH (14% mb) | EXT (%) | PRO | ASH (14 % mb) | C | C | | | | | | C | G | T | | | | |
| | | | | | A | B | C | | | | | | | | | | | | | | | | | | | | |
| MT9360 | 58.5 | 25.7 | 2 | 24 | 1 | 6 | 19 | 74 | 71.0 | 72 | 14.0 | 1.72 | 50.0 | 13.4 | 0.45 | 61.1 | 5 | 63.3 | 4.00 | 3 | 3 | 5 | 6 | 6 | 210 | | |
| N89-0562 | 60.2 | 29.9 | 7 | 11 | 2 | 3 | 21 | 74 | 71.8 | 67 | 14.5 | 2.03 | 44.6 | 14.0 | 0.47 | 59.6 | 4 | 61.6 | 4.75 | 3 | 3 | 3 | 6 | 6 | 208 | | |
| N92-2031 | 60.9 | 24.6 | 8 | 22 | 0 | 2 | 5 | 93 | 87.0 | 89 | 14.3 | 1.76 | 50.9 | 13.5 | 0.43 | 62.7 | 4 | 64.4 | 4.00 | 3 | 3 | 3 | 6 | 6 | 203 | | |
| N92-0248 | 60.4 | 24.6 | 8 | 14 | 2 | 6 | 20 | 72 | 72.6 | 67 | 13.6 | 1.85 | 54.0 | 13.0 | 0.38 | 56.2 | 2 | 56.2 | 4.00 | 2 | 3 | 3 | 4 | 4 | 183 | | |
| N92-0434 | 58.7 | 30.6 | 27 | 8 | 2 | 9 | 17 | 72 | 74.0 | 65 | 13.4 | 1.68 | 45.4 | 13.2 | 0.39 | 59.6 | 4 | 60.9 | 5.00 | 3 | 3 | 3 | 5 | 5 | 203 | | |
| FA993-40 | 58.0 | 29.5 | 21 | 10 | 2 | 6 | 28 | 64 | 72.5 | 61 | 13.3 | 1.64 | 44.7 | 12.6 | 0.39 | 54.6 | 2 | 56.5 | 5.00 | 2 | 3 | 4 | 5 | 5 | 185 | | |
| FA993-40 | 54.2 | 24.8 | 3 | 19 | 7 | 4 | 15 | 74 | 74.3 | 57 | 13.7 | 1.84 | 40.9 | 13.1 | 0.42 | 62.7 | 5 | 64.4 | 4.00 | 3 | 3 | 3 | 6 | 6 | 195 | | |
| BW173 | 57.9 | 25.9 | 6 | 16 | 1 | 3 | 13 | 83 | 80.3 | 77 | 14.5 | 1.79 | 46.0 | 13.9 | 0.40 | 57.9 | 4 | 59.8 | 5.00 | 3 | 5 | 3 | 4 | 4 | 203 | | |
| BW191 | 59.5 | 28.6 | 11 | 9 | 1 | 5 | 21 | 73 | 75.1 | 79 | 14.5 | 1.78 | 48.4 | 14.2 | 0.40 | 61.8 | 5 | 61.8 | 3.50 | 3 | 3 | 6 | 6 | 6 | 224 | | |
| HY417 | 59.2 | 30.2 | 10 | 15 | 5 | 16 | 29 | 50 | 63.7 | 58 | 12.6 | 1.69 | 42.1 | 11.8 | 0.38 | 57.6 | 3 | 58.5 | 5.50 | 3 | 5 | 4 | 6 | 6 | 205 | | |
| MN2535 | 64.1 | 28.6 | 5 | 8 | 3 | 8 | 24 | 65 | 72.3 | 72 | 15.7 | 1.77 | 49.3 | 15.8 | 0.34 | 62.1 | 3 | 62.1 | 3.50 | 3 | 3 | 5 | 5 | 5 | 206 | | |

DISTRIBUTION: A= % Soft

B= % Semi-Soft

C= % Semi-Hard

D= % Hard

RATINGS:

DOUGH CHAR (DC):

CRUMB COLOR (CC):

CRUMB GRAIN (CG):

CRUMB TEXTURE (CT):

0

STICKY-WEAK
YELLOW
IRREG, THICK
HARSH

PLIABLE
GREY

ELASTIC
DULL
OPEN, THICK
COARSE

3

6

BUCKY
BRIGHT WHITE
FINE
SILKY

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 10

FARGO, ND

LOCATION: St. Paul, MN

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | | | NIR HARD- NESS | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | Rating----- | | | | | LOAF VOL (cc) | | |
|----------|---------------|-------------|-----------|-----------|----------------|---|----|----|-------|----------------------|-----------------|-----------------|------------|------------------|------------------|------|------------|------------|-------------|----------------------|--------|-------------|---|---|-----|---|---------------------|---|---|
| | | | | | DISTRIBUTION | | | | | | PRO (14% mb) | ASH (14% mb) | EXT (%) | PRO (14 % mb) | ASH (14 % mb) | C | | | | | | C | G | T | | | | | |
| | | | | | A | B | C | D | INDEX | | | | | | | | | | | | | | | | C | C | | G | T |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Marquis | 51.9 | 25.0 | 10 | 11 | 2 | 6 | 19 | 73 | 68.4 | 66 | 16.7 | 2.31 | 53.8 | 15.2 | 0.61 | 59.6 | 4 | 61.4 | 3.25 | 3 | 3 | 4 | 4 | 4 | 180 | | | | |
| Chris | 55.6 | 25.1 | 17 | 8 | 1 | 2 | 19 | 78 | 70.2 | 84 | 16.6 | 2.10 | 55.4 | 15.5 | 0.49 | 56.2 | 2 | 58.2 | 3.50 | 3 | 3 | 6 | 4 | 4 | 193 | | | | |
| Era | 53.2 | 25.2 | 10 | 13 | 2 | 4 | 12 | 82 | 71.4 | 77 | 15.2 | 2.15 | 57.3 | 13.4 | 0.55 | 54.3 | 2 | 58.2 | 4.75 | 3 | 3 | 4 | 4 | 4 | 190 | | | | |
| Stoa | 54.5 | 27.1 | 15 | 7 | 1 | 3 | 5 | 91 | 75.6 | 80 | 16.5 | 2.22 | 56.7 | 15.3 | 0.69 | 62.7 | 5 | 64.6 | 4.50 | 3 | 3 | 5 | 5 | 5 | 190 | | | | |
| Butte 86 | 56.5 | 30.0 | 26 | 5 | 1 | 1 | 14 | 84 | 71.1 | 87 | 15.8 | 2.19 | 55.7 | 14.0 | 0.53 | 60.0 | 4 | 61.8 | 3.50 | 3 | 3 | 5 | 6 | 6 | 180 | | | | |
| SD3151 | 57.4 | 28.6 | 14 | 7 | 1 | 3 | 9 | 87 | 72.3 | 77 | 15.9 | 2.11 | 52.6 | 14.7 | 0.52 | 56.5 | 3 | 60.2 | 5.00 | 3 | 3 | 5 | 5 | 5 | 180 | | | | |
| SD3156 | 59.5 | 27.6 | 16 | 7 | 1 | 4 | 10 | 85 | 74.0 | 74 | 14.8 | 2.00 | 55.5 | 12.7 | 0.42 | 56.2 | 3 | 58.2 | 4.00 | 3 | 3 | 6 | 5 | 5 | 178 | | | | |
| SD3164 | 58.2 | 29.2 | 25 | 5 | 0 | 2 | 7 | 91 | 76.2 | 86 | 16.2 | 2.07 | 54.5 | 14.8 | 0.48 | 60.0 | 5 | 61.8 | 5.25 | 3 | 3 | 3 | 5 | 5 | 203 | | | | |
| SD8089 | 54.9 | 26.1 | 15 | 13 | 1 | 2 | 14 | 83 | 72.5 | 73 | 15.5 | 2.05 | 56.1 | 13.7 | 0.51 | 56.9 | 3 | 58.6 | 5.50 | 3 | 3 | 5 | 5 | 5 | 188 | | | | |
| SD8088 | 55.4 | 26.2 | 14 | 12 | 2 | 3 | 8 | 87 | 73.8 | 72 | 15.7 | 2.05 | 52.8 | 13.9 | 0.53 | 56.2 | 2 | 58.2 | 4.25 | 3 | 3 | 6 | 5 | 5 | 183 | | | | |
| SD3165 | 57.8 | 31.2 | 27 | 4 | 1 | 5 | 17 | 77 | 67.9 | 82 | 16.0 | 2.09 | 48.8 | 14.1 | 0.47 | 57.3 | 3 | 61.0 | 4.50 | 2 | 4 | 6 | 5 | 5 | 170 | | | | |
| SD3161 | 58.8 | 26.5 | 7 | 11 | 2 | 4 | 12 | 82 | 70.6 | 60 | 15.2 | 1.95 | 46.2 | 13.7 | 0.43 | 53.2 | 3 | 63.0 | 6.50 | 3 | 3 | 6 | 5 | 5 | 194 | | | | |
| MN91309 | 55.5 | 27.5 | 11 | 13 | 1 | 6 | 17 | 76 | 69.9 | 78 | 14.6 | 1.99 | 51.4 | 12.9 | 0.60 | 55.8 | 3 | 59.8 | 4.75 | 3 | 3 | 4 | 5 | 5 | 179 | | | | |
| MN91324 | 57.1 | 26.8 | 13 | 11 | 1 | 2 | 7 | 90 | 78.9 | 88 | 15.1 | 2.10 | 49.3 | 13.6 | 0.55 | 57.6 | 3 | 63.4 | 4.00 | 3 | 4 | 4 | 5 | 5 | 190 | | | | |
| SBE0050 | 56.4 | 27.6 | 11 | 11 | 1 | 4 | 7 | 88 | 75.3 | 78 | 15.4 | 2.07 | 50.5 | 13.7 | 0.53 | 57.3 | 3 | 63.0 | 4.50 | 3 | 3 | 5 | 5 | 5 | 193 | | | | |
| MN92387 | 57.6 | 29.7 | 30 | 5 | 0 | 4 | 19 | 77 | 69.9 | 70 | 15.2 | 2.11 | 49.3 | 13.5 | 0.43 | 51.3 | 1 | 55.0 | 4.25 | 3 | 3 | 5 | 5 | 5 | 171 | | | | |
| ND678 | 57.8 | 28.4 | 13 | 8 | 1 | 1 | 5 | 93 | 77.7 | 85 | 16.0 | 2.00 | 51.2 | 14.2 | 0.47 | 59.3 | 4 | 63.0 | 3.00 | 3 | 5 | 6 | 6 | 6 | 178 | | | | |
| ND688 | 55.6 | 28.9 | 37 | 5 | 1 | 2 | 4 | 93 | 80.1 | 84 | 16.2 | 2.19 | 49.8 | 14.5 | 0.51 | 60.0 | 4 | 61.8 | 4.00 | 3 | 4 | 6 | 5 | 5 | 190 | | | | |
| SBF0402 | 56.2 | 27.1 | 18 | 11 | 4 | 6 | 16 | 74 | 68.0 | 65 | 15.4 | 2.02 | 54.0 | 13.8 | 0.46 | 55.5 | 5 | 61.4 | 5.75 | 3 | 3 | 4 | 5 | 5 | 200 | | | | |
| MT9354 | 52.9 | 26.7 | 17 | 14 | 1 | 1 | 7 | 91 | 75.6 | 84 | 17.3 | 2.43 | 51.4 | 16.0 | 0.90 | 60.0 | 5 | 63.8 | 4.25 | 3 | 3 | 4 | 6 | 6 | 200 | | | | |

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 10(cont)

LOCATION: St. Paul, MN

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | | NIR HARD- NESS | WHEAT | | FLOUR EXT (%) | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C C | C G | C T | LOAF VOL (cc) | |
|----------|---------------|-------------|-----------|-----------|----------------|----|----|----|----------------------|-----------------|-----------------|---------------------|-----------------|-----------------|------------|------------|-------------|----------------------|--------|--------|--------|--------|---------------------|-------|
| | | | | | DISTRIBUTION | | | | | PRO (14% mb) | ASH (14% mb) | | PRO (14% mb) | ASH (14% mb) | | | | | | | | | | |
| | | | | | A | B | C | D | | | | | | | | | | | | | | | | INDEX |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| MT9360 | 54.3 | 24.4 | 2 | 21 | 3 | 7 | 17 | 73 | 68.3 | 71 | 16.1 | 2.07 | 48.3 | 15.0 | 0.69 | 57.6 | 4 | 59.4 | 4.50 | 3 | 2 | 5 | 6 | 183 |
| N89-0562 | 54.5 | 26.3 | 7 | 11 | 0 | 1 | 6 | 93 | 81.0 | 73 | 17.5 | 2.50 | 47.4 | 16.5 | 0.68 | 59.3 | 3 | 61.0 | 4.25 | 3 | 3 | 5 | 6 | 200 |
| N92-2031 | 58.4 | 26.3 | 14 | 9 | 0 | 1 | 4 | 95 | 79.2 | 88 | 17.1 | 2.19 | 55.0 | 15.5 | 0.56 | 56.9 | 3 | 58.6 | 4.00 | 3 | 4 | 6 | 6 | 172 |
| N92-0248 | 56.3 | 23.7 | 5 | 17 | 2 | 7 | 13 | 78 | 69.1 | 59 | 14.0 | 2.04 | 53.8 | 12.7 | 0.44 | 53.5 | 2 | 53.5 | 4.25 | 3 | 4 | 6 | 2 | 182 |
| N92-0434 | 55.5 | 29.4 | 24 | 7 | 1 | 1 | 10 | 88 | 73.4 | 69 | 15.7 | 2.08 | 53.1 | 14.5 | 0.51 | 58.2 | 5 | 62.2 | 5.00 | 3 | 3 | 3 | 4 | 198 |
| FA993-40 | 54.0 | 28.5 | 16 | 9 | 3 | 9 | 23 | 65 | 64.9 | 64 | 16.3 | 2.18 | 52.4 | 15.1 | 0.54 | 56.2 | 2 | 62.2 | 4.25 | 3 | 3 | 3 | 4 | 210 |
| FA993-40 | 52.4 | 26.0 | 12 | 13 | 3 | 6 | 19 | 72 | 67.5 | 68 | 15.9 | 2.18 | 57.6 | 14.5 | 0.77 | 57.9 | 3 | 59.8 | 3.50 | 3 | 0 | 6 | 4 | 169 |
| BW173 | 54.0 | 26.0 | 9 | 12 | 3 | 1 | 14 | 82 | 70.2 | 76 | 17.1 | 2.21 | 55.9 | 16.2 | 0.52 | 57.6 | 4 | 59.4 | 3.50 | 3 | 4 | 6 | 5 | 198 |
| BW191 | 54.7 | 28.2 | 16 | 8 | 1 | 4 | 17 | 78 | 68.9 | 81 | 16.3 | 2.08 | 55.7 | 14.8 | 0.55 | 58.2 | 4 | 60.3 | 3.50 | 3 | 4 | 6 | 5 | 185 |
| HY417 | 51.8 | 25.4 | 4 | 21 | 7 | 11 | 22 | 60 | 60.8 | 53 | 14.0 | 2.05 | 47.4 | 13.0 | 0.59 | 54.6 | 3 | 64.6 | 6.00 | 3 | 4 | 6 | 5 | 194 |

DISTRIBUTION: A= % Soft

B= % Semi-Soft

C= % Semi-Hard

D= % Hard

RATINGS:

DOUGH CHAR (DC):

CRUMB COLOR (CC):

CRUMB GRAIN (CG):

CRUMB TEXTURE (CT):

0

STICKY-WEAK
YELLOW
IRREG, THICK
HARSH

PLIABLE
GREY

ELASTIC
DULL
OPEN, THICK
COARSE

3

CREAMY

BUCKY
BRIGHT WHITE
FINE
SILKY

6

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 11

| LOCATION: Dickinson, ND | | | | | | | | | | | | | FARGO, ND | | | | | | | | | | | | | | |
|-------------------------|---------------|-------------|-----------|-----------|-------|----|----|----|------------------|----|---------------|------|-----------|-----------------|------------|-------|------------------|-------|------|------------|------------|-------------|----------------------|--------|--------|--------|---------------------|
| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS | | | | HARDNESS | | | | NIR | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C G | C T | LOAF VOL (cc) |
| | | | | | A | B | C | D | DISTRIBUTION | | HARD- NESS | PRO | | ASH (14% mb) | EXT (%) | PRO | ASH (14 % mb) | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | -----Rating----- | | | | | | | | | | | | | | | | | | |
| Marquis | 55.7 | 28.9 | 36 | 4 | 6 | 11 | 36 | 47 | 62.0 | 67 | 14.2 | 1.66 | 63.0 | 13.3 | 0.33 | 57.9 | 3 | 57.9 | 3.00 | 3 | 4 | 6 | 5 | 5 | 195 | | |
| Chris | 55.8 | 27.8 | 29 | 4 | 4 | 16 | 28 | 52 | 63.4 | 71 | 14.9 | 1.56 | 64.8 | 14.2 | 0.29 | 59.6 | 3 | 59.6 | 3.25 | 3 | 3 | 6 | 6 | 6 | 202 | | |
| Era | 59.5 | 29.2 | 32 | 8 | 1 | 9 | 21 | 69 | 66.1 | 71 | 13.6 | 1.58 | 66.9 | 12.2 | 0.34 | 57.6 | 3 | 57.6 | 3.25 | 3 | 4 | 6 | 4 | 4 | 192 | | |
| Stoa | 60.1 | 29.5 | 33 | 4 | 1 | 2 | 17 | 80 | 70.7 | 81 | 14.7 | 1.62 | 66.0 | 13.7 | 0.32 | 60.3 | 4 | 58.2 | 4.00 | 3 | 5 | 4 | 6 | 6 | 200 | | |
| Butte 86 | 61.1 | 34.6 | 60 | 2 | 1 | 12 | 36 | 51 | 61.2 | 87 | 15.2 | 1.54 | 65.4 | 14.3 | 0.30 | 61.4 | 3 | 61.4 | 2.00 | 3 | 3 | 6 | 5 | 5 | 178 | | |
| SD3151 | 59.1 | 33.6 | 40 | 3 | 6 | 21 | 35 | 38 | 54.6 | 75 | 16.2 | 1.57 | 61.6 | 15.5 | 0.35 | 60.5 | 3 | 62.2 | 3.50 | 3 | 3 | 3 | 6 | 6 | 212 | | |
| SD3156 | 60.1 | 33.8 | 55 | 2 | 6 | 27 | 38 | 29 | 54.1 | 73 | 15.0 | 1.49 | 66.2 | 14.2 | 0.28 | 60.8 | 3 | 60.8 | 3.00 | 3 | 3 | 6 | 6 | 6 | 193 | | |
| SD3164 | 61.6 | 33.6 | 56 | 2 | 1 | 9 | 27 | 63 | 64.8 | 77 | 15.8 | 1.62 | 65.9 | 14.8 | 0.32 | 62.1 | 4 | 62.1 | 3.25 | 3 | 3 | 6 | 6 | 6 | 203 | | |
| SD8089 | 59.2 | 29.4 | 24 | 8 | 1 | 8 | 28 | 63 | 65.6 | 72 | 13.8 | 1.43 | 67.5 | 12.7 | 0.34 | 57.3 | 2 | 53.0 | 3.00 | 2 | 4 | 6 | 2 | 2 | 172 | | |
| SD8088 | 58.8 | 30.2 | 34 | 4 | 7 | 22 | 38 | 33 | 53.3 | 64 | 14.2 | 1.42 | 66.2 | 13.2 | 0.32 | 56.2 | 2 | 52.2 | 3.25 | 2 | 5 | 5 | 4 | 4 | 195 | | |
| SD3165 | 59.7 | 35.9 | 57 | 2 | 3 | 22 | 38 | 37 | 56.6 | 81 | 16.4 | 1.68 | 63.2 | 15.6 | 0.35 | 62.1 | 3 | 62.1 | 2.50 | 3 | 3 | 4 | 5 | 5 | 195 | | |
| SD3161 | 61.5 | 32.3 | 21 | 2 | 9 | 18 | 37 | 36 | 53.8 | 65 | 14.7 | 1.47 | 63.2 | 13.7 | 0.31 | 62.1 | 3 | 57.8 | 3.50 | 3 | 3 | 5 | 4 | 4 | 204 | | |
| MN91309 | 60.4 | 34.2 | 42 | 2 | 6 | 24 | 35 | 35 | 54.4 | 75 | 14.6 | 1.58 | 64.2 | 13.3 | 0.32 | 60.8 | 3 | 60.8 | 3.25 | 3 | 3 | 6 | 6 | 6 | 198 | | |
| MN91324 | 58.6 | 30.3 | 40 | 4 | 1 | 4 | 23 | 72 | 68.3 | 82 | 14.9 | 1.57 | 65.6 | 13.7 | 0.36 | 62.7 | 4 | 60.6 | 2.50 | 3 | 4 | 6 | 6 | 6 | 192 | | |
| SBE0050 | 56.8 | 30.6 | 17 | 4 | 2 | 8 | 24 | 66 | 63.7 | 59 | 13.4 | 1.51 | 64.0 | 12.6 | 0.34 | 58.2 | 4 | 58.2 | 4.50 | 3 | 3 | 6 | 6 | 6 | 211 | | |
| MN92387 | 58.4 | 37.1 | 76 | 0 | 14 | 45 | 31 | 10 | 44.3 | 67 | 15.0 | 1.53 | 64.3 | 14.1 | 0.27 | 56.5 | 2 | 56.5 | 2.50 | 3 | 3 | 3 | 4 | 4 | 198 | | |
| ND678 | 59.7 | 31.9 | 61 | 3 | 1 | 5 | 29 | 65 | 64.1 | 78 | 15.5 | 1.51 | 62.1 | 14.2 | 0.28 | 60.5 | 3 | 60.5 | 3.00 | 3 | 6 | 5 | 6 | 6 | 208 | | |
| ND688 | 59.7 | 32.0 | 63 | 3 | 0 | 1 | 8 | 91 | 78.5 | 87 | 14.9 | 1.48 | 64.8 | 13.5 | 0.32 | 60.0 | 3 | 61.8 | 3.25 | 3 | 5 | 5 | 6 | 6 | 210 | | |
| SBF0402 | 59.4 | 36.8 | 72 | 1 | 9 | 28 | 43 | 20 | 49.8 | 70 | 15.9 | 1.42 | 66.9 | 14.3 | 0.28 | 60.5 | 5 | 60.5 | 4.00 | 3 | 3 | 5 | 6 | 6 | 202 | | |
| MT9354 | 54.5 | 27.6 | 9 | 9 | 2 | 2 | 9 | 87 | 73.6 | 77 | 15.6 | 1.67 | 61.9 | 14.3 | 0.35 | 59.0 | 4 | 61.0 | 3.75 | 3 | 4 | 4 | 4 | 6 | 190 | | |

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 11(cont)

LOCATION: Dickinson, ND

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS | | | | HARDNESS | | NIR | WHEAT | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D | Rating----- | | | | LOAF VOL (cc) | |
|----------|---------------|-------------|-----------|-----------|--------------|----|----|----|---------------|-----|------|-----------------|------------|-------|------|------------|------------|-------------|----------------------|---|-------------|---|---|-----|---------------------|-----------------|
| | | | | | DISTRIBUTION | | | | HARD- NESS | PRO | | ASH (14% mb) | EXT (%) | FLOUR | | | | | | | C | C | G | T | | |
| | | | | | A | B | C | D | | | | | | INDEX | PRO | | | | | | | | | | | ASH (14% mb) |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MT9360 | 60.1 | 28.9 | 17 | 7 | 2 | 6 | 20 | 72 | 66.5 | 64 | 14.7 | 1.61 | 61.4 | 13.9 | 0.34 | 58.2 | 3 | 60.2 | 3.00 | 3 | 3 | 5 | 6 | 192 | | |
| N89-0562 | 59.7 | 34.2 | 28 | 3 | 2 | 5 | 27 | 66 | 66.0 | 78 | 14.9 | 1.85 | 61.0 | 14.2 | 0.39 | 56.9 | 2 | 60.6 | 3.25 | 3 | 3 | 4 | 6 | 198 | | |
| N92-2031 | 61.4 | 28.3 | 43 | 3 | 0 | 1 | 11 | 88 | 74.0 | 81 | 15.6 | 1.62 | 62.6 | 14.9 | 0.36 | 58.6 | 3 | 60.6 | 2.75 | 3 | 3 | 4 | 5 | 183 | | |
| N92-0248 | 57.8 | 27.4 | 27 | 5 | 9 | 22 | 36 | 33 | 53.2 | 60 | 14.4 | 1.49 | 65.4 | 13.1 | 0.29 | 55.8 | 1 | 53.8 | 2.75 | 3 | 3 | 6 | 4 | 175 | | |
| N92-0434 | 59.7 | 34.1 | 53 | 3 | 1 | 9 | 34 | 56 | 62.5 | 68 | 14.6 | 1.49 | 62.6 | 13.8 | 0.30 | 61.4 | 4 | 61.4 | 3.25 | 3 | 3 | 6 | 6 | 208 | | |
| FA993-40 | 56.8 | 30.4 | 28 | 7 | 2 | 14 | 27 | 57 | 62.4 | 59 | 14.6 | 1.69 | 63.3 | 13.5 | 0.34 | 60.0 | 2 | 55.8 | 3.25 | 3 | 4 | 6 | 4 | 193 | | |
| FA993-40 | 57.5 | 32.1 | 34 | 3 | 6 | 16 | 38 | 40 | 54.6 | 66 | 15.1 | 1.59 | 67.0 | 13.9 | 0.33 | 63.1 | 4 | 59.0 | 2.75 | 3 | 3 | 4 | 5 | 190 | | |
| BW173 | 59.3 | 29.9 | 23 | 5 | 0 | 4 | 23 | 73 | 67.3 | 79 | 15.7 | 1.60 | 65.7 | 14.8 | 0.32 | 60.5 | 3 | 58.2 | 2.75 | 3 | 4 | 6 | 6 | 202 | | |
| BW191 | 57.3 | 34.2 | 54 | 3 | 11 | 32 | 30 | 27 | 50.1 | 84 | 16.7 | 1.73 | 64.5 | 15.4 | 0.35 | 66.5 | 4 | 64.2 | 2.50 | 3 | 3 | 4 | 6 | 210 | | |
| HY417 | 59.0 | 32.9 | 24 | 6 | 5 | 20 | 43 | 32 | 54.2 | 52 | 13.1 | 1.60 | 60.8 | 12.0 | 0.34 | 59.3 | 3 | 55.0 | 3.75 | 4 | 5 | 4 | 5 | 184 | | |
| MN2535 | 62.4 | 31.7 | 19 | 2 | 7 | 19 | 34 | 40 | 54.2 | 78 | 17.4 | 1.80 | 59.7 | 16.5 | 0.32 | 64.0 | 3 | 59.8 | 2.00 | 2 | 4 | 3 | 3 | 175 | | |

DISTRIBUTION: A= % Soft

B= % Semi-Soft

C= % Semi-Hard

D= % Hard

RATINGS:

DOUGH CHAR (DC):
CRUMB COLOR (CC):
CRUMB GRAIN (CG):
CRUMB TEXTURE (CT):

0

STICKY-WEAK
YELLOW
IRREG, THICK
HARSH

3

ELASTIC
DULL
OPEN, THICK
COARSE

6

BUCKY
BRIGHT WHITE
FINE
SILKY

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 12

| LOCATION: <i>Powell, WY</i> | | | | | | | | | | FARGO, ND | | | | | | | | | | | | | | | | |
|-----------------------------|---------------|-------------|-----------|-----------|----------------|----|----|----|-------|---------------|-------|-----------------|------------|------|------------------|------|------------|------------|-------------|----------------------|--------|-------------|---|---|-----|---------------------|
| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | | NIR | | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | Rating----- | | | | LOAF VOL (cc) |
| | | | | | A | B | C | D | INDEX | HARD- NESS | PRO | ASH (14% mb) | EXT (%) | PRO | ASH (14 % mb) | C | | | | | | C | G | T | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Marquis | 61.0 | 34.4 | 58 | 2 | 3 | 13 | 40 | 44 | 62.5 | 88 | 13.4 | 1.65 | 57.9 | 12.7 | 0.40 | 56.9 | 1 | 58.7 | 2.25 | 1 | 5 | 4 | 4 | 4 | 162 | |
| Chris | 61.0 | 27.9 | 28 | 3 | 0 | 3 | 15 | 82 | 72.7 | 85 | 13.6 | 1.61 | 58.1 | 13.0 | 0.38 | 55.8 | 1 | 58.0 | 2.50 | 1 | 3 | 4 | 4 | 4 | 167 | |
| Era | 62.4 | 33.5 | 60 | 3 | 2 | 13 | 33 | 52 | 62.0 | 88 | 11.0 | 1.50 | 55.5 | 10.1 | 0.42 | 50.2 | 1 | 56.4 | 3.00 | 1 | 3 | 2 | 2 | 2 | 148 | |
| Stoa | 61.0 | 33.9 | 59 | 2 | 1 | 6 | 24 | 69 | 68.4 | 84 | 12.9 | 1.64 | 59.3 | 12.3 | 0.37 | 55.8 | 1 | 58.0 | 3.00 | 1 | 3 | 4 | 5 | 5 | 176 | |
| Butte 86 | 62.3 | 39.4 | 78 | 1 | 2 | 13 | 39 | 46 | 59.2 | 87 | 12.9 | 1.60 | 57.9 | 11.8 | 0.35 | 55.0 | 1 | 59.2 | 2.50 | 1 | 4 | 2 | 2 | 2 | 150 | |
| SD3151 | 61.9 | 35.6 | 57 | 2 | 1 | 11 | 37 | 51 | 60.4 | 77 | 13.5 | 1.69 | 53.7 | 12.9 | 0.43 | 53.2 | 1 | 56.4 | 3.25 | 1 | 3 | 3 | 4 | 4 | 179 | |
| SD3156 | 63.3 | 36.6 | 66 | 2 | 1 | 14 | 44 | 41 | 59.3 | 73 | 11.3 | 1.50 | 55.8 | 10.4 | 0.35 | 52.6 | 1 | 54.3 | 3.50 | 1 | 3 | 2 | 3 | 3 | 149 | |
| SD3164 | 63.0 | 41.1 | 78 | 1 | 4 | 30 | 38 | 28 | 53.5 | 78 | 13.8 | 1.64 | 58.0 | 12.9 | 0.38 | 57.6 | 1 | 60.5 | 2.75 | 1 | 3 | 5 | 6 | 6 | 177 | |
| SD8089 | 62.6 | 34.1 | 60 | 1 | 2 | 15 | 39 | 44 | 58.0 | 77 | 12.0 | 1.50 | 55.1 | 11.0 | 0.41 | 50.2 | 1 | 54.3 | 2.50 | 1 | 4 | 2 | 2 | 2 | 149 | |
| SD8088 | 60.2 | 33.3 | 48 | 2 | 3 | 16 | 34 | 47 | 58.5 | 71 | 12.9 | 1.45 | 55.3 | 11.7 | 0.40 | 51.3 | 1 | 55.1 | 3.00 | 1 | 4 | 5 | 3 | 3 | 162 | |
| SD3165 | 62.6 | 43.2 | 72 | 0 | 8 | 31 | 41 | 20 | 49.6 | 78 | 13.5 | 1.70 | 58.0 | 12.8 | 0.39 | 55.5 | 1 | 58.5 | 2.00 | 1 | 4 | 5 | 5 | 5 | 166 | |
| SD3161 | 62.4 | 35.1 | 46 | 1 | 5 | 26 | 41 | 28 | 52.5 | 62 | 11.9 | 1.52 | 48.8 | 11.3 | 0.36 | 50.2 | 1 | 56.4 | 3.75 | 1 | 4 | 3 | 4 | 4 | 166 | |
| MN91309 | 61.4 | 36.1 | 52 | 1 | 2 | 11 | 40 | 47 | 58.6 | 77 | 11.9 | 1.65 | 51.6 | 11.0 | 0.39 | 53.8 | 1 | 60.5 | 3.00 | 1 | 5 | 3 | 4 | 4 | 175 | |
| MN91324 | 61.5 | 36.0 | 65 | 2 | 3 | 12 | 41 | 44 | 58.6 | 94 | 12.7 | 1.58 | 56.3 | 11.6 | 0.43 | 55.0 | 1 | 56.4 | 2.50 | 1 | 4 | 3 | 2 | 2 | 150 | |
| SBE0050 | 62.0 | 36.4 | 62 | 2 | 5 | 12 | 39 | 44 | 57.8 | 77 | 11.0 | 1.59 | 50.7 | 10.3 | 0.44 | 53.2 | 1 | 58.5 | 2.75 | 1 | 3 | 4 | 3 | 3 | 165 | |
| MN92387 | 62.7 | 42.6 | 87 | 0 | 7 | 30 | 42 | 21 | 50.5 | 74 | 12.3 | 1.58 | 53.3 | 11.7 | 0.38 | 52.2 | 1 | 54.3 | 2.75 | 1 | 3 | 5 | 2 | 2 | 157 | |
| ND678 | 63.0 | 34.2 | 46 | 0 | 1 | 4 | 28 | 67 | 65.9 | 85 | 13.3 | 1.62 | 54.2 | 12.4 | 0.36 | 59.3 | 2 | 59.2 | 2.50 | 2 | 6 | 4 | 6 | 6 | 186 | |
| ND688 | 61.2 | 39.5 | 79 | 1 | 6 | 15 | 33 | 46 | 57.7 | 91 | 12.0 | 1.73 | 58.2 | 10.8 | 0.38 | 55.5 | 1 | 59.2 | 2.50 | 1 | 4 | 3 | 2 | 2 | 157 | |
| SBF0402 | 62.0 | 39.2 | 77 | 1 | 3 | 21 | 42 | 34 | 54.2 | 81 | 12.5 | 1.41 | 60.7 | 11.6 | 0.36 | 53.5 | 1 | 58.5 | 3.50 | 2 | 3 | 4 | 5 | 5 | 182 | |
| MT9354 | 61.8 | 36.1 | 56 | 4 | 1 | 2 | 20 | 77 | 67.7 | 81 | 12.4 | 1.50 | 54.0 | 11.7 | 0.39 | 55.8 | 1 | 58.0 | 3.50 | 2 | 3 | 4 | 5 | 5 | 185 | |

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Table 12(cont)

LOCATION: *Powell, WY*

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS | | | | HARDNESS | | | NIR | | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C G | C T | C G | T VOL | LOAF VOL (cc) |
|----------|---------------|-------------|-----------|-----------|-------|----|----|----|----------|---------------|------|-----------------|------------|-------|------------------|-------|---|-------|------|------------|------------|-------------|----------------------|--------|--------|--------|--------|----------|---------------------|
| | | | | | A | B | C | D | INDEX | HARD- NESS | PRO | ASH (14% mb) | EXT (%) | PRO | ASH (14 % mb) | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| N89-0562 | 62.4 | 34.6 | 56 | 4 | 1 | 5 | 12 | 82 | 69.4 | 82 | 13.3 | 1.80 | 51.4 | 12.4 | 0.48 | 56.5 | 1 | 58.5 | 3.00 | 2 | 3 | 3 | 5 | 5 | 180 | | | | |
| N92-2031 | 62.6 | 27.8 | 43 | 2 | 0 | 1 | 10 | 89 | 77.8 | 89 | 12.6 | 1.65 | 53.7 | 12.0 | 0.45 | 54.3 | 1 | 58.3 | 3.00 | 1 | 4 | 3 | 4 | 4 | 163 | | | | |
| N92-0248 | 62.2 | 30.0 | 57 | 2 | 1 | 9 | 30 | 60 | 64.1 | 74 | 11.9 | 1.51 | 55.6 | 10.9 | 0.36 | 53.2 | 1 | 56.4 | 2.50 | 1 | 4 | 3 | 4 | 4 | 165 | | | | |
| N92-0434 | 62.6 | 40.9 | 75 | 2 | 6 | 29 | 40 | 25 | 52.0 | 76 | 12.1 | 1.53 | 50.2 | 11.3 | 0.41 | 54.6 | 1 | 56.6 | 2.75 | 1 | 4 | 3 | 4 | 4 | 168 | | | | |
| FA993-40 | 60.2 | 37.9 | 75 | 4 | 5 | 17 | 38 | 40 | 56.4 | 77 | 11.5 | 1.60 | 55.6 | 10.7 | 0.40 | 49.9 | 1 | 56.4 | 3.00 | 1 | 3 | 3 | 2 | 2 | 152 | | | | |
| FA993-40 | 61.0 | 37.4 | 74 | 1 | 11 | 30 | 31 | 28 | 51.2 | 68 | 11.6 | 1.60 | 54.9 | 10.4 | 0.39 | 53.5 | 1 | 58.2 | 2.00 | 1 | 3 | 3 | 2 | 2 | 145 | | | | |
| BW173 | 61.0 | 37.8 | 76 | 1 | 5 | 30 | 40 | 25 | 52.1 | 76 | 13.8 | 1.76 | 54.7 | 13.1 | 0.40 | 56.2 | 1 | 60.3 | 2.50 | 2 | 3 | 4 | 6 | 6 | 187 | | | | |
| BW191 | 60.6 | 38.2 | 77 | 0 | 4 | 29 | 36 | 31 | 54.1 | 76 | 14.6 | 1.65 | 53.7 | 13.7 | 0.38 | 55.8 | 1 | 58.0 | 2.50 | 2 | 3 | 4 | 6 | 6 | 179 | | | | |
| HY417 | 62.2 | 42.5 | 80 | 0 | 17 | 44 | 26 | 13 | 45.3 | 69 | 11.2 | 1.48 | 56.1 | 10.1 | 0.38 | 51.6 | 1 | 54.5 | 3.00 | 1 | 3 | 3 | 4 | 4 | 168 | | | | |

DISTRIBUTION: A= % Soft

B= % Semi-Soft

C= % Semi-Hard

D= % Hard

| RATINGS: | | | | | | | | | | 0 | | | 3 | | | 6 | | |
|---------------------|--|--|--|--|--|--|--|--|--|--------------|--|--|-------------|--|--|--------------|--|--|
| DOUGH CHAR (DC): | | | | | | | | | | STICKY-WEAK | | | ELASTIC | | | BUCKY | | |
| CRUMB COLOR (CC): | | | | | | | | | | YELLOW | | | GREY | | | BRIGHT WHITE | | |
| CRUMB GRAIN (CG): | | | | | | | | | | IRREG, THICK | | | OPEN, THICK | | | FINE | | |
| CRUMB TEXTURE (CT): | | | | | | | | | | HARSH | | | COARSE | | | SILKY | | |

1995 Spring Uniform Regional Nursery

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WHEAT QUALITY LAB

Table 13

| LOCATION: <i>Sidney, MT</i> | | | | | | | | | | FARGO, ND | | | | | | | | | | | | | | | | |
|-----------------------------|---------------|-------------|-----------|-----------|-------|----|----|----|----------|---------------|------|-----------------|------------|------|------------------|------|-------|------|------|---|-------------|----------------------|--------|--------|--------|---------------------|
| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS | | | | HARDNESS | | NIR | | WHEAT | | FLOUR | | FLOUR | | MIX | | BAKE ABS | MIX TIME (mln) | D C | C G | C T | LOAF VOL (cc) |
| | | | | | A | B | C | D | INDEX | HARD- NESS | PRO | ASH (14% mb) | EXT (%) | PRO | ASH (14 % mb) | ABS | PAT | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Marquis | 61.4 | 31.6 | 40 | 4 | 3 | 12 | 37 | 48 | 60.3 | 90 | 14.5 | 1.70 | 63.2 | 13.8 | 0.40 | 57.6 | 2 | 57.6 | 3.75 | 2 | 5 | 3 | 5 | 5 | 193 | |
| Chris | 61.0 | 29.7 | 22 | 1 | 2 | 12 | 25 | 61 | 72.8 | 97 | 15.1 | 1.62 | 66.8 | 14.7 | 0.37 | 59.6 | 3 | 61.6 | 3.50 | 3 | 3 | 3 | 5 | 5 | 194 | |
| Era | 61.4 | 32.0 | 28 | 2 | 3 | 12 | 33 | 52 | 61.1 | 82 | 13.0 | 1.56 | 64.5 | 12.3 | 0.38 | 56.5 | 3 | 56.5 | 5.25 | 3 | 3 | 3 | 4 | 192 | | |
| Stoa | 61.3 | 33.7 | 37 | 1 | 1 | 11 | 38 | 50 | 59.7 | 84 | 13.8 | 1.61 | 66.2 | 13.3 | 0.36 | 62.5 | 4 | 62.5 | 3.50 | 3 | 3 | 4 | 6 | 6 | 200 | |
| Butte 86 | 61.8 | 34.8 | 45 | 1 | 1 | 9 | 31 | 59 | 61.8 | 93 | 13.7 | 1.53 | 65.3 | 12.9 | 0.35 | 62.5 | 3 | 62.5 | 3.00 | 3 | 3 | 4 | 6 | 6 | 190 | |
| SD3151 | 62.3 | 32.5 | 19 | 0 | 0 | 9 | 34 | 57 | 61.4 | 86 | 15.0 | 1.59 | 62.9 | 14.9 | 0.39 | 60.3 | 3 | 60.3 | 4.00 | 3 | 3 | 5 | 6 | 6 | 198 | |
| SD3156 | 62.8 | 32.8 | 45 | 3 | 5 | 18 | 36 | 41 | 56.9 | 75 | 13.4 | 1.54 | 66.5 | 12.7 | 0.32 | 60.0 | 2 | 60.0 | 3.50 | 2 | 3 | 3 | 5 | 5 | 197 | |
| SD3164 | 63.0 | 33.6 | 41 | 1 | 2 | 10 | 32 | 56 | 62.1 | 85 | 14.3 | 1.54 | 65.4 | 13.8 | 0.35 | 63.4 | 4 | 63.4 | 4.50 | 3 | 5 | 5 | 6 | 6 | 195 | |
| SD8089 | 60.4 | 30.0 | 22 | 5 | 3 | 16 | 33 | 48 | 60.6 | 77 | 13.0 | 1.46 | 64.3 | 12.2 | 0.38 | 59.6 | 3 | 59.6 | 3.00 | 2 | 3 | 5 | 6 | 6 | 192 | |
| SD8088 | 61.6 | 31.0 | 17 | 2 | 4 | 20 | 38 | 38 | 56.9 | 76 | 13.1 | 1.46 | 60.7 | 12.5 | 0.36 | 59.3 | 2 | 59.3 | 4.00 | 3 | 5 | 4 | 5 | 5 | 198 | |
| SD3165 | 62.3 | 34.6 | 41 | 2 | 4 | 18 | 41 | 37 | 57.1 | 80 | 14.0 | 1.55 | 63.5 | 13.5 | 0.36 | 62.1 | 3 | 60.5 | 3.00 | 3 | 3 | 4 | 5 | 5 | 197 | |
| SD3161 | 62.4 | 30.5 | 11 | 3 | 5 | 14 | 37 | 44 | 59.8 | 63 | 13.0 | 1.44 | 57.5 | 12.6 | 0.34 | 59.3 | 3 | 57.3 | 4.50 | 3 | 3 | 5 | 5 | 5 | 202 | |
| MN91309 | 61.5 | 37.8 | 37 | 0 | 5 | 24 | 44 | 27 | 53.2 | 85 | 14.2 | 1.53 | 63.7 | 13.5 | 0.35 | 62.7 | 4 | 61.4 | 3.75 | 3 | 6 | 3 | 5 | 5 | 191 | |
| MN91324 | 61.5 | 32.9 | 32 | 5 | 3 | 8 | 29 | 60 | 62.7 | 95 | 13.9 | 1.58 | 66.0 | 13.4 | 0.29 | 65.1 | 4 | 62.5 | 3.00 | 3 | 6 | 5 | 6 | 6 | 194 | |
| SBE0050 | 61.5 | 34.4 | 25 | 3 | 1 | 9 | 34 | 56 | 61.7 | 73 | 13.5 | 1.52 | 62.4 | 13.2 | 0.35 | 61.1 | 4 | 58.5 | 4.50 | 3 | 3 | 3 | 6 | 6 | 192 | |
| MN92387 | 62.0 | 37.8 | 60 | 0 | 7 | 31 | 44 | 18 | 49.1 | 72 | 13.5 | 1.52 | 61.1 | 13.2 | 0.31 | 56.9 | 3 | 57.6 | 3.50 | 2 | 5 | 5 | 4 | 4 | 180 | |
| ND678 | 62.5 | 30.1 | 20 | 1 | 0 | 4 | 26 | 70 | 66.0 | 92 | 14.6 | 1.50 | 60.5 | 13.7 | 0.33 | 60.5 | 3 | 59.6 | 3.25 | 3 | 6 | 3 | 6 | 6 | 196 | |
| ND688 | 59.9 | 34.3 | 50 | 3 | 1 | 5 | 25 | 69 | 65.7 | 88 | 13.5 | 1.55 | 62.1 | 13.0 | 0.35 | 60.0 | 3 | 60.0 | 4.00 | 3 | 3 | 5 | 6 | 6 | 193 | |
| SBF0402 | 61.5 | 34.7 | 51 | 3 | 9 | 24 | 40 | 27 | 51.9 | 78 | 14.4 | 1.50 | 66.8 | 13.9 | 0.34 | 59.6 | 4 | 58.5 | 5.00 | 3 | 3 | 3 | 6 | 6 | 201 | |
| MT9354 | 61.8 | 37.7 | 45 | 1 | 2 | 13 | 27 | 58 | 60.5 | 83 | 14.3 | 1.51 | 62.4 | 13.9 | 0.36 | 59.3 | 4 | 61.3 | 4.75 | 3 | 3 | 3 | 6 | 6 | 201 | |

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 13(cont)

LOCATION: *Sidney, MT*

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | NIR | | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D | Rating----- | | | | | LOAF VOL (cc) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------|---------------|-------------|-----------|-----------|----------------|---|---|---------------|-----|-----------------|------------|-------|------------------|-------|---|------------|------------|-------------|----------------------|---|-------------|---|---|-------|--|---------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | DISTRIBUTION | | | HARD- NESS | PRO | ASH (14% mb) | EXT (%) | PRO | ASH (14 % mb) | C | C | | | | | | G | T | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | A | B | C | | | | | | | | | | | | | | | | D | INDEX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DISTRIBUTION: A= % Soft

B= % Seml-Soft
C= % Seml-Hard
D= % Hard

| RATINGS: | | 0 | | | 3 | | | 6 | | |
|---------------------|--|--------------|---------|-------------|-------|--------|------|------|--------|--------------|
| | | STICKY-WEAK | PLIABLE | ELASTIC | BUCKY | YELLOW | GREY | DULL | CREAMY | BRIGHT WHITE |
| DOUGH CHAR (DC): | | | | | | | | | | |
| CRUMB COLOR (CC): | | | | | | | | | | |
| CRUMB GRAIN (CG): | | IRREG, THICK | | OPEN, THICK | FINE | | | | | |
| CRUMB TEXTURE (CT): | | HARSH | | COARSE | SILKY | | | | | |

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 14

| LOCATION: Williston, ND | | | | | | | | | | FARGO, ND | | | | | | | | | | | | | | | | | | | | |
|-------------------------|---------------|-------------|------------|-----------|-------|----|----|----|----------|---------------|------|-----------------|------------|------|------------------|------|-------|---|------------|------------|-------------|----------------------|--------|-------------|---|---|---|---|-----|---------------------|
| VARIETY | TW (lb/bu) | KWT (gr) | I.G (%) | SM (%) | SKWCS | | | | HARDNESS | | NIR | | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | Rating----- | | | | | | LOAF VOL (cc) |
| | | | | | A | B | C | D | INDEX | HARD- NESS | PRO | ASH (14% mb) | EXT (%) | PRO | ASH (14 % mb) | C | C | G | | | | | | T | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Marquis | 59.4 | 31.4 | 39 | 2 | 6 | 15 | 34 | 45 | 56.3 | 70 | 15.1 | 1.45 | 49.5 | 14.4 | 0.36 | 58.6 | 3 | 3 | 3 | 3 | 3 | 2.50 | 3 | 3 | 3 | 3 | 3 | 5 | 178 | |
| Chris | 57.7 | 26.0 | 18 | 4 | 2 | 10 | 31 | 57 | 61.5 | 76 | 15.5 | 1.53 | 51.4 | 14.8 | 0.36 | 59.3 | 3 | 3 | 3 | 3 | 3 | 3.50 | 3 | 3 | 3 | 3 | 3 | 6 | 195 | |
| Era | 54.5 | 25.7 | 11 | 10 | 2 | 5 | 18 | 75 | 67.3 | 68 | 14.3 | 1.65 | 51.2 | 13.4 | 0.47 | 56.5 | 4 | 3 | 3 | 3 | 3 | 5.25 | 3 | 3 | 3 | 3 | 3 | 5 | 209 | |
| Stoa | 58.6 | 29.5 | 28 | 4 | 1 | 8 | 24 | 67 | 65.2 | 74 | 14.6 | 1.54 | 54.8 | 14.3 | 0.35 | 57.9 | 3 | 3 | 3 | 3 | 3 | 4.00 | 3 | 3 | 3 | 3 | 6 | 6 | 198 | |
| Butte 86 | 60.5 | 33.2 | 57 | 1 | 1 | 6 | 28 | 65 | 64.4 | 84 | 15.7 | 1.62 | 54.0 | 15.0 | 0.35 | 60.3 | 3 | 3 | 3 | 3 | 3 | 2.50 | 3 | 3 | 3 | 3 | 6 | 6 | 193 | |
| SD3151 | 60.1 | 30.5 | 29 | 1 | 1 | 6 | 27 | 66 | 66.0 | 82 | 16.6 | 1.56 | 52.2 | 16.0 | 0.40 | 56.9 | 2 | 3 | 5 | 4 | 5 | 4.25 | 3 | 5 | 4 | 5 | 4 | 5 | 190 | |
| SD3156 | 61.1 | 32.8 | 47 | 3 | 3 | 18 | 40 | 39 | 56.1 | 71 | 14.9 | 1.54 | 53.1 | 14.2 | 0.32 | 57.3 | 2 | 3 | 4 | 4 | 5 | 3.50 | 6 | 3 | 4 | 4 | 5 | 5 | 183 | |
| SD3164 | 61.4 | 34.7 | 55 | 2 | 2 | 7 | 40 | 51 | 60.9 | 78 | 15.9 | 1.55 | 56.2 | 15.3 | 0.36 | 60.8 | 3 | 3 | 5 | 4 | 6 | 3.75 | 3 | 5 | 4 | 4 | 6 | 6 | 194 | |
| SD8089 | 59.3 | 29.0 | 21 | 5 | 4 | 13 | 33 | 50 | 59.6 | 71 | 14.1 | 1.49 | 55.4 | 13.3 | 0.38 | 55.3 | 1 | 2 | 3 | 5 | 5 | 3.25 | 2 | 3 | 5 | 5 | 5 | 5 | 182 | |
| SD8088 | 60.1 | 28.0 | 17 | 5 | 5 | 12 | 23 | 60 | 62.5 | 64 | 13.9 | 1.41 | 51.4 | 13.6 | 0.37 | 56.5 | 1 | 2 | 3 | 5 | 5 | 3.50 | 2 | 3 | 5 | 5 | 5 | 5 | 195 | |
| SD3165 | 61.8 | 36.9 | 55 | 2 | 3 | 16 | 41 | 40 | 56.8 | 80 | 16.9 | 1.70 | 54.0 | 16.0 | 0.36 | 62.1 | 2 | 3 | 5 | 5 | 6 | 2.50 | 3 | 5 | 5 | 5 | 6 | 6 | 208 | |
| SD3161 | 62.2 | 31.8 | 17 | 2 | 5 | 24 | 34 | 37 | 54.2 | 70 | 15.0 | 1.39 | 52.8 | 14.8 | 0.33 | 61.4 | 3 | 3 | 3 | 5 | 6 | 4.00 | 3 | 3 | 3 | 5 | 6 | 6 | 208 | |
| MN91309 | 60.5 | 34.0 | 36 | 1 | 2 | 19 | 36 | 43 | 58.3 | 79 | 15.9 | 1.70 | 49.4 | 15.1 | 0.37 | 60.8 | 2 | 3 | 6 | 5 | 5 | 3.25 | 3 | 6 | 5 | 5 | 5 | 5 | 200 | |
| MN91324 | 61.0 | 30.4 | 39 | 4 | 1 | 5 | 20 | 74 | 66.9 | 86 | 15.6 | 1.59 | 55.9 | 14.6 | 0.38 | 60.3 | 2 | 2 | 3 | 5 | 6 | 3.50 | 2 | 3 | 5 | 5 | 6 | 6 | 187 | |
| SBE0050 | 59.4 | 29.6 | 16 | 5 | 1 | 4 | 19 | 76 | 68.4 | 63 | 14.5 | 1.72 | 48.8 | 13.8 | 0.38 | 56.9 | 2 | 2 | 3 | 3 | 5 | 6.00 | 2 | 3 | 3 | 3 | 5 | 5 | 190 | |
| MN92387 | 61.4 | 34.7 | 64 | 1 | 9 | 30 | 37 | 24 | 50.1 | 71 | 14.9 | 1.47 | 53.1 | 14.7 | 0.32 | 59.3 | 2 | 2 | 3 | 4 | 5 | 2.50 | 2 | 3 | 4 | 4 | 5 | 5 | 188 | |
| ND678 | 62.2 | 27.9 | 21 | 4 | 1 | 2 | 13 | 84 | 71.6 | 74 | 15.0 | 1.53 | 52.8 | 14.1 | 0.33 | 60.3 | 3 | 3 | 6 | 5 | 6 | 3.25 | 3 | 6 | 5 | 6 | 6 | 6 | 200 | |
| ND688 | 60.2 | 29.6 | 50 | 3 | 0 | 3 | 17 | 80 | 69.5 | 74 | 14.9 | 1.49 | 53.3 | 14.1 | 0.36 | 59.3 | 3 | 3 | 4 | 5 | 6 | 3.50 | 3 | 4 | 5 | 6 | 6 | 6 | 193 | |
| SBF0402 | 61.4 | 34.8 | 55 | 2 | 11 | 29 | 36 | 24 | 50.1 | 63 | 15.9 | 1.51 | 55.7 | 15.5 | 0.36 | 60.0 | 4 | 3 | 3 | 5 | 6 | 4.50 | 3 | 3 | 5 | 6 | 6 | 6 | 191 | |
| MT9354 | 59.8 | 29.5 | 15 | 4 | 2 | 3 | 12 | 83 | 70.7 | 76 | 14.7 | 1.63 | 52.1 | 14.0 | 0.41 | 56.5 | 3 | 2 | 3 | 5 | 6 | 5.50 | 2 | 3 | 5 | 6 | 6 | 6 | 185 | |

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WHEAT QUALITY LAB

Table 14(cont)

LOCATION: Williston, ND

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWC'S HARDNESS | | | | NIR HARD- NESS | WHEAT | | FLOUR EXT (%) | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C C | C G | C T | LOAF VOL (cc) | |
|----------|---------------|-------------|-----------|-----------|-----------------|----|----|----|----------------------|-------|-----------------|---------------------|-------|------------------|------------|------------|-------------|----------------------|--------|--------|--------|--------|---------------------|-------|
| | | | | | DISTRIBUTION | | | | | PRO | ASH (14% mb) | | PRO | ASH (14 % mb) | | | | | | | | | | |
| | | | | | A | B | C | D | | | | | | | | | | | | | | | | INDEX |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| MT9360 | 60.6 | 29.1 | 10 | 4 | 2 | 6 | 32 | 60 | 62.1 | 73 | 15.3 | 1.59 | 51.4 | 15.2 | 0.36 | 58.2 | 2 | 60.5 | 4.00 | 3 | 3 | 4 | 6 | 196 |
| N89-0562 | 60.6 | 31.5 | 25 | 2 | 0 | 5 | 23 | 72 | 67.5 | 74 | 15.3 | 1.81 | 50.9 | 14.7 | 0.42 | 56.5 | 2 | 58.5 | 3.75 | 2 | 3 | 5 | 6 | 182 |
| N92-2031 | 62.0 | 28.1 | 24 | 2 | 1 | 5 | 24 | 70 | 66.8 | 84 | 16.3 | 1.62 | 55.5 | 15.9 | 0.41 | 59.6 | 2 | 60.2 | 3.25 | 3 | 5 | 5 | 6 | 187 |
| N92-0248 | 60.0 | 26.0 | 13 | 7 | 5 | 10 | 28 | 57 | 60.5 | 64 | 14.8 | 1.57 | 54.8 | 14.0 | 0.36 | 56.2 | 1 | 56.2 | 3.50 | 2 | 3 | 3 | 6 | 180 |
| N92-0434 | 60.6 | 34.3 | 57 | 2 | 3 | 12 | 39 | 46 | 58.0 | 59 | 14.7 | 1.55 | 49.8 | 14.5 | 0.36 | 60.5 | 5 | 60.5 | 5.00 | 6 | 3 | 6 | 6 | 193 |
| FA993-40 | 57.9 | 31.6 | 35 | 4 | 8 | 26 | 39 | 27 | 51.5 | 59 | 14.3 | 1.57 | 49.5 | 13.8 | 0.37 | 53.8 | 2 | 56.5 | 4.00 | 2 | 5 | 2 | 6 | 177 |
| FA993-40 | 60.6 | 32.3 | 40 | 4 | 6 | 16 | 36 | 42 | 55.8 | 66 | 15.0 | 1.44 | 52.4 | 14.0 | 0.37 | 59.3 | 2 | 59.3 | 3.50 | 2 | 3 | 4 | 6 | 180 |
| BW173 | 59.1 | 28.9 | 14 | 5 | 1 | 7 | 28 | 64 | 62.5 | 76 | 15.6 | 1.57 | 55.7 | 15.1 | 0.38 | 56.2 | 2 | 58.4 | 4.00 | 2 | 3 | 3 | 5 | 192 |
| BW191 | 59.9 | 30.6 | 41 | 2 | 1 | 12 | 33 | 54 | 61.3 | 89 | 17.1 | 1.72 | 55.0 | 16.1 | 0.40 | 60.5 | 3 | 60.5 | 3.00 | 3 | 5 | 3 | 6 | 195 |
| HY417 | 59.7 | 32.7 | 29 | 4 | 6 | 23 | 38 | 33 | 53.5 | 55 | 13.1 | 1.57 | 46.9 | 13.0 | 0.36 | 55.0 | 2 | 55.0 | 6.00 | 2 | 3 | 3 | 4 | 179 |
| MN2535 | 62.1 | 31.8 | 20 | 3 | 4 | 14 | 39 | 43 | 57.2 | 78 | 18.0 | 2.00 | 44.6 | 17.6 | 0.41 | 60.5 | 2 | 62.5 | 2.25 | 3 | 5 | 3 | 5 | 200 |

DISTRIBUTION: A= % Soft

B= % Semi-Soft

C= % Semi-Hard

D= % Hard

RATINGS:

DOUGH CHAR (DC):

CRUMB COLOR (CC):

CRUMB GRAIN (CG):

CRUMB TEXTURE (CT):

STICKY-WEAK

YELLOW

IRREG, THICK

HARSH

PLIABLE

GREY

OPEN, THICK

COARSE

3

ELASTIC

DULL

CREAMY

6

BUCKY

BRIGHT WHITE

FINE

SILKY

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 15

| LOCATION: <i>Aberdeen, ID</i> | | | | | | | | | | FARGO, ND | | | | | | | | | | | | | | | |
|-------------------------------|---------------|-------------|-----------|-----------|----------------|----|----|-----|---------------|-----------------|-----------------|------------|------------------|------------------|------------|------------|-------------|----------------------|------|---|---|---|---|---|---------------------|
| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | NIR | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D | C | | | | | LOAF VOL (cc) |
| | | | | | A | B | C | | HARD- NESS | PRO (14% mb) | ASH (14% mb) | EXT (%) | PRO (14 % mb) | ASH (14 % mb) | | | | | | C | C | C | G | T | |
| Marquis | 60.2 | 36.0 | 70 | 0 | 7 | 19 | 28 | 46 | 63.0 | 81 | 14.9 | 1.67 | 54.6 | 14.4 | 0.30 | 60.0 | 3 | 60.0 | 2.75 | 2 | 3 | 5 | 6 | 6 | 180 |
| Chris | 58.6 | 32.3 | 48 | 1 | 11 | 25 | 18 | 46 | 61.9 | 80 | 15.0 | 1.58 | 58.2 | 14.2 | 0.38 | 60.3 | 2 | 60.3 | 2.25 | 2 | 3 | 6 | 5 | 5 | 168 |
| Era | 58.6 | 30.6 | 36 | 4 | 7 | 17 | 30 | 46 | 61.3 | 80 | 12.7 | 1.59 | 53.3 | 11.4 | 0.39 | 55.5 | 1 | 55.5 | 3.00 | 2 | 3 | 4 | 4 | 4 | 173 |
| Stoa | 60.6 | 34.5 | 67 | 1 | 4 | 25 | 36 | 35 | 57.6 | 78 | 13.9 | 1.59 | 60.9 | 13.2 | 0.35 | 58.6 | 2 | 58.6 | 3.25 | 2 | 3 | 4 | 5 | 5 | 169 |
| Butte 86 | 60.3 | 36.6 | 69 | 0 | 5 | 19 | 33 | 43 | 61.7 | 85 | 14.3 | 1.65 | 60.4 | 12.9 | 0.34 | 57.9 | 1 | 58.5 | 2.50 | 2 | 3 | 6 | 5 | 5 | 165 |
| SD3151 | 60.3 | 35.5 | 48 | 1 | 7 | 16 | 31 | 46 | 62.8 | 74 | 13.8 | 1.65 | 52.8 | 13.3 | 0.40 | 56.2 | 1 | 58.5 | 3.50 | 2 | 5 | 3 | 4 | 4 | 179 |
| SD3156 | 61.3 | 37.8 | 70 | 1 | 10 | 35 | 33 | 22 | 49.7 | 82 | 13.2 | 1.50 | 59.5 | 12.1 | 0.34 | 57.3 | 1 | 59.2 | 3.00 | 2 | 3 | 3 | 5 | 5 | 172 |
| SD3164 | 62.0 | 41.4 | 83 | 0 | 45 | 25 | 13 | 17 | 39.2 | 86 | 14.6 | 1.57 | 60.9 | 13.3 | 0.35 | 61.8 | 2 | 62.4 | 2.75 | 2 | 3 | 5 | 6 | 6 | 178 |
| SD8089 | 59.5 | 33.2 | 58 | 1 | 9 | 24 | 27 | 40 | 60.2 | 85 | 13.8 | 1.51 | 63.8 | 12.8 | 0.38 | 56.2 | 1 | 56.2 | 2.50 | 1 | 3 | 3 | 2 | 2 | 156 |
| SD8088 | 59.9 | 32.7 | 49 | 2 | 4 | 24 | 41 | 31 | 55.6 | 72 | 13.5 | 1.49 | 59.5 | 12.3 | 0.39 | 55.5 | 1 | 57.3 | 3.00 | 1 | 3 | 3 | 2 | 2 | 155 |
| SD3165 | 61.1 | 40.7 | 76 | 1 | 21 | 37 | 24 | 18 | 46.5 | 85 | 14.5 | 1.65 | 59.2 | 13.7 | 0.38 | 61.8 | 1 | 62.4 | 2.25 | 2 | 4 | 5 | 5 | 5 | 184 |
| SD3161 | 60.8 | 35.3 | 55 | 1 | 16 | 39 | 22 | 23 | 48.5 | 52 | 13.8 | 1.58 | 53.7 | 13.1 | 0.35 | 59.6 | 2 | 59.6 | 3.00 | 2 | 3 | 4 | 6 | 6 | 183 |
| MN91309 | 59.7 | 35.6 | 55 | 2 | 8 | 29 | 29 | 34 | 56.3 | 71 | 13.2 | 1.58 | 56.8 | 12.2 | 0.35 | 57.6 | 2 | 57.6 | 3.50 | 2 | 5 | 5 | 5 | 5 | 184 |
| MN91324 | 59.0 | 31.6 | 35 | 2 | 7 | 14 | 26 | 53 | 62.7 | 78 | 13.6 | 1.79 | 57.5 | 12.3 | 0.40 | 59.6 | 2 | 59.6 | 3.00 | 2 | 5 | 3 | 5 | 5 | 183 |
| SBE0050 | 57.8 | 31.0 | 29 | 4 | 8 | 22 | 32 | 38 | 55.8 | 57 | 12.8 | 1.55 | 47.4 | 12.2 | 0.41 | 59.3 | 2 | 59.3 | 4.00 | 3 | 5 | 3 | 5 | 5 | 193 |
| MN92387 | 61.9 | 41.8 | 88 | 1 | 22 | 45 | 23 | 10 | 43.2 | 76 | 13.2 | 1.59 | 52.8 | 12.2 | 0.35 | 57.6 | 1 | 58.5 | 2.00 | 1 | 0 | 2 | 2 | 2 | 160 |
| ND678 | 61.6 | 34.8 | 58 | 2 | 5 | 21 | 35 | 39 | 58.9 | 82 | 14.8 | 1.54 | 53.7 | 14.0 | 0.35 | 60.3 | 2 | 62.4 | 2.50 | 2 | 6 | 5 | 6 | 6 | 182 |
| ND688 | 60.6 | 40.4 | 88 | 1 | 7 | 28 | 42 | 23 | 51.2 | 89 | 13.0 | 1.51 | 62.1 | 11.5 | 0.38 | 58.2 | 1 | 58.2 | 2.25 | 1 | 5 | 3 | 4 | 4 | 166 |
| SBF0402 | 60.1 | 37.0 | 71 | 2 | 63 | 17 | 10 | 10 | 31.8 | 73 | 13.8 | 1.47 | 60.9 | 12.9 | 0.35 | 59.0 | 2 | 59.0 | 3.75 | 3 | 3 | 3 | 6 | 6 | 190 |
| MT9354 | 61.6 | 36.8 | 48 | 2 | 2 | 19 | 33 | 46 | 61.1 | 84 | 13.6 | 1.51 | 58.1 | 12.3 | 0.38 | 56.2 | 2 | 56.2 | 4.00 | 2 | 3 | 3 | 5 | 5 | 182 |

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USDA / ARS
WHEAT QUALITY LAB

Table 15(cont)

LOCATION: *Aberdeen, ID*

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWC'S HARDNESS | | | | NIR | | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (mln) | D C | C C | C G | C T | LOAF VOL (cc) |
|----------|---------------|-------------|-----------|-----------|-----------------|----|----|----|---------------|-----|-----------------|---------------------|-------|------------------|-------|------|------------|------------|-------------|----------------------|--------|--------|--------|--------|---------------------|
| | | | | | DISTRIBUTION | | | | HARD- NESS | PRO | ASH (14% mb) | FLOUR EXT (%) | FLOUR | | | | | | | | | | | | |
| | | | | | A | B | C | D | | | | | PRO | ASH (14 % mb) | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| MT9360 | 61.0 | 34.0 | 32 | 2 | 9 | 26 | 29 | 36 | 56.2 | 67 | 14.2 | 1.64 | 54.5 | 14.1 | 0.38 | 57.6 | 2 | 58.5 | 3.00 | 3 | 6 | 3 | 5 | 5 | 191 |
| N89-0562 | 61.7 | 42.9 | 78 | 2 | 11 | 33 | 35 | 21 | 49.4 | 77 | 14.2 | 1.85 | 53.5 | 12.7 | 0.44 | 57.3 | 1 | 58.5 | 2.50 | 2 | 0 | 3 | 5 | 5 | 188 |
| N92-2031 | 61.4 | 32.2 | 55 | 1 | 2 | 10 | 28 | 60 | 69.8 | 79 | 14.0 | 1.58 | 59.7 | 13.5 | 0.40 | 59.3 | 2 | 59.3 | 2.50 | 2 | 3 | 3 | 5 | 5 | 183 |
| N92-0248 | 60.1 | 29.5 | 32 | 3 | 5 | 22 | 30 | 43 | 60.6 | 68 | 13.3 | 1.58 | 58.4 | 12.1 | 0.31 | 57.9 | 2 | 58.5 | 2.75 | 2 | 3 | 3 | 6 | 6 | 187 |
| N92-0434 | 60.3 | 37.5 | 69 | 1 | 9 | 28 | 23 | 40 | 58.5 | 76 | 13.4 | 1.61 | 60.0 | 12.2 | 0.35 | 59.0 | 2 | 59.0 | 2.75 | 2 | 4 | 3 | 6 | 6 | 184 |
| FA993-40 | 59.4 | 37.9 | 66 | 3 | 20 | 36 | 24 | 20 | 48.1 | 76 | 13.5 | 1.54 | 57.5 | 12.3 | 0.36 | 63.1 | 2 | 63.1 | 2.00 | 2 | 3 | 3 | 4 | 4 | 177 |
| FA993-40 | 57.8 | 34.1 | 47 | 2 | 10 | 25 | 31 | 34 | 56.0 | 71 | 13.3 | 1.66 | 60.6 | 12.2 | 0.38 | 59.0 | 1 | 59.0 | 2.25 | 1 | 4 | 3 | 4 | 4 | 163 |
| BW191 | 59.3 | 36.4 | 69 | 2 | 13 | 32 | 28 | 27 | 51.7 | 82 | 15.4 | 1.67 | 58.6 | 14.5 | 0.40 | 64.0 | 3 | 64.0 | 2.25 | 3 | 3 | 3 | 5 | 5 | 203 |
| HY417 | 61.0 | 38.0 | 72 | 2 | 17 | 27 | 16 | 40 | 59.2 | 62 | 11.4 | 1.56 | 54.5 | 10.4 | 0.35 | 60.3 | 2 | 60.3 | 2.75 | 3 | 5 | 3 | 4 | 4 | 191 |

DISTRIBUTION: A= % Soft

B= % Seml-Soft

C= % Seml-Hard

D= % Hard

| 0 | | | | 3 | | | | 6 | | | |
|---------------------|--|--|--|--------------|--|--|--|--------------|--|--|--|
| RATINGS: | | | | ELASTIC | | | | BUCKY | | | |
| DOUGH CHAR (DC): | | | | STICKY-WEAK | | | | CREAMY | | | |
| CRUMB COLOR (CC): | | | | PLIABLE | | | | BRIGHT WHITE | | | |
| CRUMB GRAIN (CG): | | | | GREY | | | | FINE | | | |
| CRUMB TEXTURE (CT): | | | | YELLOW | | | | SILKY | | | |
| | | | | IRREG, THICK | | | | | | | |
| | | | | HARSH | | | | | | | |
| | | | | DULL | | | | | | | |
| | | | | OPEN, THICK | | | | | | | |
| | | | | COARSE | | | | | | | |

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USDA / ARS
WHEAT QUALITY LAB

Table 16

LOCATION: Bozeman, MT

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | | NIR HARD- NESS | WHEAT | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C C | C G | C T | LOAF VOL (cc) | | |
|----------|---------------|-------------|-----------|-----------|----------------|----|----|----|----------------------|-----------------|-----------------|------------|-----------------|------------|------------|-------------|----------------------|--------|--------|--------|--------|---------------------|-----------------|-------|
| | | | | | DISTRIBUTION | | | | | PRO (14% mb) | ASH (14% mb) | EXT (%) | PRO (14% mb) | | | | | | | | | | ASH (14% mb) | |
| | | | | | A | B | C | D | | | | | | | | | | | | | | | | INDEX |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Marquis | 60.8 | 32.1 | 44 | 1 | 7 | 20 | 23 | 50 | 66.0 | 86 | 16.0 | 1.68 | 59.2 | 15.0 | 0.36 | 59.0 | 3 | 59.0 | 2.50 | 3 | 3 | 4 | 4 | 187 |
| Chris | 61.1 | 32.2 | 45 | 1 | 6 | 28 | 35 | 31 | 54.6 | 90 | 16.4 | 1.62 | 61.5 | 16.2 | 0.33 | 61.1 | 2 | 61.1 | 2.25 | 3 | 3 | 5 | 5 | 194 |
| Era | 62.8 | 33.2 | 54 | 1 | 0 | 9 | 29 | 62 | 63.6 | 87 | 14.4 | 1.53 | 62.1 | 13.1 | 0.35 | 56.5 | 2 | 56.5 | 4.00 | 3 | 3 | 3 | 4 | 194 |
| Stoa | 61.0 | 34.4 | 54 | 1 | 2 | 10 | 37 | 51 | 60.0 | 83 | 15.5 | 1.57 | 62.8 | 14.5 | 0.31 | 61.1 | 3 | 61.1 | 2.50 | 3 | 3 | 4 | 5 | 202 |
| Butte 86 | 60.6 | 34.9 | 61 | 1 | 2 | 13 | 37 | 48 | 59.0 | 85 | 15.8 | 1.58 | 62.1 | 14.6 | 0.32 | 62.1 | 2 | 62.4 | 2.00 | 2 | 3 | 4 | 5 | 182 |
| SD3151 | 59.7 | 32.8 | 32 | 1 | 3 | 14 | 39 | 44 | 58.0 | 87 | 16.8 | 1.64 | 58.0 | 16.5 | 0.37 | 59.0 | 3 | 61.3 | 3.50 | 3 | 3 | 5 | 5 | 209 |
| SD3156 | 61.6 | 35.6 | 66 | 0 | 12 | 27 | 37 | 24 | 50.7 | 70 | 14.8 | 1.61 | 62.3 | 14.3 | 0.29 | 59.0 | 3 | 59.0 | 3.25 | 3 | 3 | 4 | 5 | 188 |
| SD3164 | 63.7 | 39.8 | 71 | 1 | 4 | 30 | 42 | 24 | 51.9 | 95 | 16.7 | 1.69 | 61.6 | 15.7 | 0.32 | 62.7 | 3 | 62.7 | 2.75 | 3 | 5 | 3 | 6 | 207 |
| SD8089 | 59.9 | 32.6 | 44 | 1 | 7 | 25 | 36 | 32 | 52.6 | 88 | 15.1 | 1.40 | 65.7 | 14.3 | 0.33 | 57.6 | 1 | 57.6 | 2.00 | 1 | 3 | 3 | 4 | 173 |
| SD8088 | 59.5 | 33.1 | 45 | 2 | 13 | 28 | 41 | 18 | 48.6 | 75 | 15.1 | 1.43 | 62.8 | 14.1 | 0.34 | 56.2 | 1 | 56.2 | 2.00 | 1 | 3 | 3 | 2 | 177 |
| SD3165 | 61.2 | 39.1 | 68 | 0 | 5 | 25 | 41 | 29 | 54.0 | 84 | 16.4 | 1.74 | 61.4 | 15.9 | 0.34 | 61.8 | 2 | 62.4 | 2.25 | 3 | 3 | 5 | 6 | 210 |
| SD3161 | 61.3 | 32.9 | 35 | 1 | 5 | 23 | 41 | 31 | 53.8 | 62 | 14.8 | 1.43 | 62.7 | 14.0 | 0.30 | 57.6 | 3 | 57.6 | 3.50 | 2 | 3 | 5 | 5 | 201 |
| MN91309 | 61.0 | 38.2 | 54 | 1 | 8 | 29 | 37 | 26 | 51.8 | 84 | 15.1 | 1.52 | 61.1 | 13.9 | 0.33 | 57.9 | 3 | 58.5 | 3.50 | 2 | 3 | 3 | 5 | 184 |
| MN91324 | 61.5 | 36.5 | 60 | 1 | 4 | 11 | 29 | 56 | 60.0 | 99 | 15.8 | 1.60 | 63.2 | 14.5 | 0.33 | 59.0 | 2 | 61.3 | 2.25 | 2 | 3 | 3 | 5 | 191 |
| SBE0050 | 61.0 | 37.4 | 59 | 1 | 3 | 15 | 32 | 50 | 58.3 | 78 | 14.3 | 1.49 | 62.7 | 13.5 | 0.37 | 57.6 | 3 | 57.6 | 3.50 | 3 | 5 | 5 | 6 | 198 |
| MN92387 | 63.1 | 40.3 | 82 | 0 | 9 | 31 | 39 | 21 | 49.9 | 89 | 15.8 | 1.65 | 63.5 | 14.6 | 0.31 | 55.0 | 1 | 57.3 | 2.25 | 2 | 3 | 3 | 6 | 173 |
| ND678 | 62.0 | 32.0 | 33 | 1 | 1 | 5 | 30 | 64 | 64.8 | 82 | 15.8 | 1.57 | 61.1 | 14.6 | 0.33 | 59.3 | 2 | 59.3 | 2.25 | 2 | 5 | 3 | 6 | 192 |
| ND688 | 61.5 | 38.9 | 73 | 1 | 0 | 5 | 26 | 69 | 64.7 | 99 | 15.5 | 1.53 | 65.4 | 14.5 | 0.34 | 58.2 | 2 | 60.4 | 3.00 | 2 | 3 | 3 | 6 | 192 |
| SBF0402 | 61.5 | 39.5 | 73 | 0 | 10 | 37 | 37 | 16 | 47.2 | 67 | 15.4 | 1.48 | 61.6 | 14.8 | 0.30 | 56.9 | 3 | 58.6 | 3.75 | 3 | 3 | 5 | 6 | 196 |
| MT9354 | 62.3 | 38.3 | 62 | 1 | 1 | 8 | 29 | 62 | 62.4 | 85 | 15.1 | 1.49 | 57.1 | 13.7 | 0.31 | 58.6 | 2 | 58.6 | 3.25 | 2 | 3 | 5 | 6 | 201 |

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 16(cont)

LOCATION: *Bozeman, MT*

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS | | | | HARDNESS | | NIR | | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (mln) | D C | C C | C G | C T | LOAF VOL (cc) |
|----------|---------------|-------------|-----------|-----------|-------|----|----|----|----------|---------------|------|-----------------|------------|------|------------------|------|-------|--|------------|------------|-------------|----------------------|--------|--------|--------|--------|---------------------|
| | | | | | A | B | C | D | INDEX | HARD- NESS | PRO | ASH (14% mb) | EXT (%) | PRO | ASH (14 % mb) | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MT9360 | 61.3 | 31.3 | 23 | 1 | 3 | 17 | 32 | 48 | 58.3 | 85 | 16.5 | 1.64 | 57.3 | 15.9 | 0.32 | 63.7 | 4 | | 63.7 | 3.00 | 3 | 3 | 3 | 3 | 6 | 6 | 208 |
| N89-0562 | 61.8 | 37.7 | 56 | 0 | 9 | 28 | 36 | 27 | 51.6 | 86 | 16.8 | 1.85 | 59.9 | 15.6 | 0.41 | 60.0 | 3 | | 61.9 | 2.50 | 3 | 3 | 3 | 3 | 5 | 6 | 198 |
| N92-2031 | 62.2 | 30.9 | 43 | 2 | 0 | 8 | 32 | 60 | 62.5 | 92 | 16.6 | 1.56 | 62.6 | 16.2 | 0.37 | 63.7 | 3 | | 63.7 | 2.50 | 3 | 3 | 3 | 3 | 3 | 6 | 205 |
| N92-0248 | 63.2 | 31.9 | 48 | 1 | 4 | 13 | 30 | 53 | 58.9 | 78 | 14.6 | 1.68 | 62.3 | 13.1 | 0.28 | 61.1 | 2 | | 61.1 | 2.50 | 2 | 3 | 4 | 6 | 6 | 6 | 189 |
| N92-0434 | 62.0 | 40.5 | 74 | 1 | 4 | 29 | 40 | 27 | 52.1 | 75 | 15.5 | 1.62 | 57.1 | 14.4 | 0.28 | 62.7 | 4 | | 62.7 | 2.50 | 3 | 3 | 3 | 3 | 6 | 6 | 202 |
| FA993-40 | 61.5 | 38.5 | 63 | 1 | 3 | 10 | 38 | 49 | 58.7 | 75 | 14.0 | 1.64 | 60.7 | 13.3 | 0.35 | 57.9 | 2 | | 58.5 | 3.00 | 2 | 3 | 5 | 5 | 5 | 5 | 183 |
| FA993-40 | 60.7 | 34.6 | 45 | 2 | 4 | 21 | 42 | 33 | 54.1 | 84 | 15.0 | 1.52 | 62.3 | 13.7 | 0.34 | 63.1 | 3 | | 63.1 | 2.25 | 2 | 4 | 3 | 4 | 3 | 4 | 187 |
| BW173 | 61.6 | 34.5 | 45 | 1 | 2 | 13 | 41 | 44 | 57.7 | 99 | 16.2 | 1.51 | 63.2 | 15.2 | 0.34 | 62.1 | 3 | | 62.4 | 2.00 | 2 | 0 | 6 | 5 | 5 | 5 | 185 |
| BW191 | 59.4 | 35.6 | 54 | 1 | 20 | 34 | 32 | 14 | 44.9 | 87 | 17.1 | 1.71 | 61.6 | 16.0 | 0.34 | 62.7 | 3 | | 62.7 | 2.25 | 2 | 4 | 5 | 6 | 6 | 6 | 188 |
| HY417 | 62.9 | 39.0 | 61 | 1 | 5 | 24 | 44 | 27 | 52.9 | 70 | 13.7 | 1.49 | 62.3 | 12.6 | 0.32 | 60.3 | 3 | | 60.3 | 4.00 | 2 | 3 | 5 | 6 | 6 | 6 | 190 |
| MN2535 | 62.6 | 31.6 | 18 | 2 | 6 | 20 | 36 | 38 | 54.9 | 80 | 17.9 | 1.90 | 55.7 | 17.2 | 0.34 | 63.1 | 3 | | 63.1 | 1.50 | 3 | 4 | 3 | 5 | 5 | 5 | 204 |

DISTRIBUTION: A= % Soft

B= % Semi-Soft

C= % Semi-Hard

D= % Hard

| RATINGS: | | 0 | | | 3 | | | 6 | | |
|----------|--|---------------------|--------------|-------------|---------|-------------|--------------|-------|--|--|
| | | DOUGH CHAR (DC): | | STICKY-WEAK | PLIABLE | ELASTIC | BUCKY | | | |
| | | CRUMB COLOR (CC): | YELLOW | GREY | DULL | CREAMY | BRIGHT WHITE | | | |
| | | CRUMB GRAIN (CG): | IRREG, THICK | | | OPEN, THICK | | FINE | | |
| | | CRUMB TEXTURE (CT): | HARSH | | | COARSE | | SILKY | | |

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 17

| LOCATION: <i>Havre,MT</i> | | | | | | | | | | FARGO, ND | | | | | | | | | | | | | | | |
|---------------------------|---------------|-------------|-----------|-----------|----------------|----|----|----|----------------------|-----------------|-----------------|------------|------------------|------------------|--------|------------|------------|-------------|----------------------|--------|-------------|--------|-------|---|---------------------|
| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | | NIR HARD- NESS | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | Rating----- | | | | LOAF VOL (cc) |
| | | | | | DISTRIBUTION | | | | | PRO (14% mb) | ASH (14% mb) | EXT (%) | PRO (14 % mb) | ASH (14 % mb) | C C | | | | | | C G | C T | | | |
| | | | | | A | B | C | D | | | | | | | | | | | | | | | INDEX | | |
| Marquis | 62.2 | 36.0 | 60 | 0 | 3 | 19 | 42 | 36 | 55.3 | 82 | 12.5 | 1.63 | 63.4 | 12.1 | 0.35 | 55.8 | 2 | 53.8 | 3.50 | 2 | 5 | 6 | 4 | 4 | 168 |
| Chris | 62.5 | 32.9 | 38 | 1 | 2 | 12 | 35 | 51 | 60.3 | 84 | 13.1 | 1.53 | 64.5 | 12.6 | 0.32 | 56.2 | 2 | 54.2 | 3.25 | 2 | 3 | 6 | 4 | 4 | 180 |
| Era | 61.6 | 30.3 | 33 | 3 | 0 | 4 | 18 | 78 | 68.2 | 78 | 12.2 | 1.61 | 65.4 | 11.3 | 0.35 | 56.9 | 2 | 56.9 | 4.00 | 2 | 3 | 6 | 4 | 4 | 192 |
| Stoa | 62.2 | 33.9 | 41 | 1 | 1 | 6 | 26 | 67 | 63.7 | 68 | 12.0 | 1.57 | 66.4 | 11.0 | 0.33 | 56.2 | 2 | 56.2 | 3.75 | 2 | 3 | 6 | 5 | 5 | 178 |
| Butte 86 | 62.6 | 37.8 | 63 | 0 | 1 | 9 | 33 | 57 | 60.7 | 80 | 12.4 | 1.53 | 65.3 | 11.0 | 0.35 | 56.9 | 2 | 56.9 | 2.75 | 2 | 3 | 6 | 4 | 4 | 170 |
| SD3151 | 62.9 | 35.2 | 38 | 1 | 0 | 6 | 31 | 63 | 62.4 | 74 | 12.3 | 1.50 | 63.8 | 11.8 | 0.38 | 55.8 | 2 | 57.8 | 3.50 | 2 | 4 | 6 | 6 | 6 | 180 |
| SD3156 | 63.5 | 35.4 | 51 | 1 | 1 | 10 | 34 | 55 | 60.6 | 66 | 11.3 | 1.56 | 65.7 | 10.3 | 0.32 | 55.3 | 2 | 55.3 | 3.50 | 2 | 4 | 5 | 5 | 5 | 166 |
| SD3164 | 64.0 | 37.0 | 63 | 1 | 2 | 13 | 34 | 51 | 59.8 | 71 | 11.8 | 1.59 | 65.7 | 11.0 | 0.35 | 55.5 | 2 | 57.4 | 4.50 | 2 | 3 | 4 | 5 | 5 | 172 |
| SD8089 | 61.0 | 33.7 | 63 | 2 | 1 | 13 | 30 | 56 | 61.1 | 62 | 10.8 | 1.48 | 65.6 | 10.0 | 0.38 | 52.2 | 1 | 52.2 | 3.00 | 2 | 4 | 4 | 4 | 4 | 158 |
| SD8088 | 61.0 | 31.7 | 30 | 1 | 3 | 15 | 33 | 49 | 59.2 | 58 | 11.0 | 1.43 | 65.7 | 10.4 | 0.38 | 51.6 | 1 | 53.4 | 3.00 | 2 | 4 | 5 | 4 | 4 | 178 |
| SD3165 | 63.5 | 40.6 | 63 | 0 | 3 | 11 | 34 | 52 | 58.1 | 68 | 11.5 | 1.59 | 64.5 | 10.5 | 0.35 | 55.3 | 2 | 57.0 | 3.00 | 3 | 4 | 5 | 6 | 6 | 182 |
| SD3161 | 63.1 | 32.7 | 23 | 1 | 1 | 10 | 30 | 59 | 61.5 | 54 | 11.5 | 1.55 | 62.4 | 10.8 | 0.32 | 60.3 | 3 | 56.2 | 3.75 | 3 | 3 | 5 | 5 | 5 | 180 |
| MN91309 | 62.6 | 37.5 | 57 | 1 | 4 | 19 | 33 | 44 | 56.7 | 64 | 12.1 | 1.52 | 65.1 | 11.0 | 0.35 | 55.8 | 2 | 55.8 | 3.75 | 2 | 3 | 4 | 5 | 5 | 179 |
| MN91324 | 63.0 | 36.1 | 57 | 1 | 4 | 14 | 26 | 56 | 60.2 | 79 | 11.8 | 1.60 | 64.9 | 10.9 | 0.38 | 53.8 | 1 | 55.8 | 3.25 | 2 | 4 | 3 | 5 | 5 | 172 |
| SBE0050 | 62.8 | 34.4 | 41 | 1 | 1 | 2 | 20 | 77 | 68.5 | 66 | 11.2 | 1.55 | 63.0 | 10.4 | 0.33 | 54.3 | 2 | 56.2 | 5.00 | 2 | 5 | 5 | 5 | 5 | 178 |
| MN92387 | 63.5 | 39.9 | 75 | 0 | 3 | 20 | 40 | 37 | 55.2 | 66 | 12.1 | 1.58 | 63.5 | 11.4 | 0.30 | 52.2 | 1 | 54.2 | 2.75 | 2 | 3 | 4 | 5 | 5 | 174 |
| ND678 | 63.5 | 32.1 | 36 | 2 | 0 | 1 | 4 | 95 | 79.8 | 86 | 12.8 | 1.50 | 64.2 | 11.8 | 0.33 | 59.0 | 2 | 57.0 | 2.75 | 3 | 5 | 6 | 6 | 6 | 200 |
| ND688 | 62.6 | 39.7 | 79 | 0 | 1 | 1 | 20 | 78 | 69.2 | 87 | 12.7 | 1.51 | 65.4 | 11.5 | 0.35 | 56.9 | 2 | 56.9 | 2.75 | 2 | 4 | 6 | 6 | 6 | 183 |
| SBF0402 | 63.0 | 38.3 | 68 | 1 | 6 | 24 | 36 | 34 | 53.7 | 67 | 11.7 | 1.48 | 68.9 | 11.1 | 0.34 | 54.3 | 2 | 54.3 | 4.75 | 3 | 3 | 6 | 4 | 4 | 190 |
| MT9354 | 62.2 | 35.2 | 35 | 2 | 0 | 3 | 19 | 78 | 67.6 | 78 | 12.9 | 1.50 | 62.3 | 12.1 | 0.36 | 55.5 | 2 | 57.4 | 4.75 | 3 | 4 | 6 | 5 | 5 | 192 |

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Table 17(cont)

LOCATION: *Havre, MT*

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS | | | HARDNESS | | NIR | WHEAT | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D | Rating | | | | LOAF VOL (cc) |
|----------|---------------|-------------|-----------|-----------|-------|----|----|----------|-------|-----|-------|-----------------|------------|------|-----------------|------------|-------------|----------------------|------|--------|---|---|---|---------------------|
| | | | | | A | B | C | D | INDEX | | PRO | ASH (14% mb) | EXT (%) | PRO | ASH (14% mb) | | | | | C | C | C | G | T |
| MT9360 | 62.4 | 32.2 | 26 | 2 | 1 | 10 | 30 | 59 | 63.1 | 73 | 13.0 | 1.60 | 59.4 | 12.8 | 0.37 | 55.8 | 2 | 55.8 | 3 | 3 | 3 | 6 | 6 | 6 |
| N89-0562 | 63.4 | 40.1 | 66 | 0 | 0 | 3 | 16 | 81 | 69.5 | 75 | 12.7 | 1.79 | 58.3 | 11.9 | 0.41 | 54.3 | 1 | 56.2 | 2 | 4 | 6 | 6 | 6 | 181 |
| N92-2031 | 63.7 | 32.1 | 43 | 1 | 0 | 3 | 20 | 77 | 69.2 | 84 | 13.6 | 1.59 | 65.6 | 12.9 | 0.34 | 58.2 | 2 | 56.2 | 2 | 4 | 4 | 4 | 5 | 191 |
| N92-0248 | 63.5 | 31.6 | 43 | 1 | 2 | 12 | 29 | 57 | 61.1 | 75 | 12.5 | 1.48 | 67.9 | 11.5 | 0.32 | 54.6 | 1 | 52.6 | 2 | 4 | 6 | 5 | 5 | 174 |
| N92-0434 | 64.1 | 40.6 | 74 | 0 | 0 | 10 | 35 | 55 | 60.7 | 76 | 12.5 | 1.53 | 65.9 | 11.7 | 0.33 | 58.2 | 2 | 56.2 | 3 | 3 | 4 | 4 | 4 | 192 |
| FA993-40 | 61.9 | 38.7 | 62 | 1 | 1 | 7 | 25 | 67 | 64.1 | 67 | 11.5 | 1.57 | 66.7 | 10.7 | 0.37 | 54.3 | 1 | 52.2 | 2 | 3 | 4 | 4 | 4 | 172 |
| FA993-40 | 62.5 | 36.0 | 63 | 0 | 3 | 15 | 44 | 38 | 55.8 | 67 | 11.7 | 1.60 | 66.8 | 10.9 | 0.35 | 57.6 | 2 | 55.4 | 2 | 4 | 3 | 4 | 4 | 171 |
| BW173 | 62.2 | 34.7 | 42 | 1 | 0 | 4 | 24 | 72 | 65.2 | 90 | 13.3 | 1.57 | 64.8 | 12.3 | 0.33 | 57.6 | 2 | 57.6 | 2 | 4 | 4 | 4 | 6 | 182 |
| BW191 | 62.6 | 38.7 | 68 | 0 | 1 | 9 | 38 | 52 | 59.8 | 75 | 13.1 | 1.62 | 64.9 | 12.1 | 0.34 | 59.3 | 2 | 57.0 | 3 | 3 | 3 | 3 | 6 | 195 |
| HY417 | 63.8 | 40.4 | 62 | 0 | 6 | 19 | 48 | 27 | 52.3 | 65 | 10.6 | 1.49 | 66.2 | 9.7 | 0.32 | 58.5 | 1 | 56.2 | 2 | 3 | 3 | 3 | 3 | 172 |
| MN2535 | 62.1 | 42.6 | 34 | 2 | 0 | 2 | 10 | 88 | 70.8 | 109 | 11.4 | 1.69 | 51.9 | 9.3 | 0.58 | 48.5 | 1 | 56.2 | 3.75 | 1 | 0 | 6 | 6 | 138 |

DISTRIBUTION: A= % Soft

B= % Semi-Soft

C= % Semi-Hard

D= % Hard

RATINGS:

DOUGH CHAR (DC):

CRUMB COLOR (CC):

CRUMB GRAIN (CG):

CRUMB TEXTURE (CT):

STICKY-WEAK

YELLOW

IRREG, THICK

HARSH

PLIABLE

GREY

OPEN, THICK

COARSE

ELASTIC

DULL

CREAMY

BUCKY

BRIGHT WHITE

FINE

SILKY

3

0

6

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WHEAT QUALITY LAB

Table 18

LOCATION: Pullman, WA

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | | NIR | | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C C | C G | C T | LOAF VOL (cc) |
|----------|---------------|-------------|-----------|-----------|----------------|----|----|----|---------------|-----|-----------------|------------|-------|------|------------------|------|------------|------------|-------------|----------------------|--------|--------|--------|--------|---------------------|
| | | | | | DISTRIBUTION | | | | HARD- NESS | PRO | ASH (14% mb) | EXT (%) | FLOUR | | | | | | | | | | | | |
| | | | | | A | B | C | D | | | | | INDEX | PRO | ASH (14 % mb) | | | | | | | | | | |
| Marquis | 60.7 | 32.1 | 55 | 1 | 1 | 5 | 21 | 73 | 66.6 | 76 | 13.6 | 1.56 | 66.2 | 13.1 | 0.39 | 57.6 | 2 | 57.6 | 4.00 | 2 | 3 | 3 | 5 | 182 | |
| Chris | 60.7 | 27.5 | 16 | 2 | 1 | 3 | 22 | 74 | 71.7 | 83 | 13.8 | 1.44 | 65.7 | 13.2 | 0.37 | 55.3 | 2 | 57.2 | 4.25 | 2 | 3 | 3 | 5 | 193 | |
| Era | 61.6 | 29.4 | 19 | 3 | 0 | 2 | 21 | 77 | 67.4 | 76 | 11.8 | 1.45 | 63.1 | 10.9 | 0.38 | 49.6 | 1 | 54.5 | 6.00 | 1 | 3 | 3 | 5 | 172 | |
| Stoa | 60.9 | 29.6 | 20 | 1 | 0 | 2 | 17 | 81 | 70.1 | 72 | 11.7 | 1.40 | 63.2 | 11.2 | 0.34 | 54.3 | 2 | 56.2 | 6.00 | 2 | 3 | 4 | 4 | 172 | |
| Butte 86 | 61.9 | 31.9 | 27 | 1 | 1 | 4 | 21 | 74 | 72.5 | 75 | 11.0 | 1.36 | 62.6 | 10.0 | 0.34 | 48.5 | 1 | 56.2 | 6.50 | 1 | 4 | 4 | 2 | 142 | |
| SD3151 | 61.9 | 30.2 | 12 | 1 | 1 | 4 | 14 | 81 | 70.5 | 72 | 12.3 | 1.35 | 60.7 | 12.2 | 0.38 | 52.2 | 1 | 58.4 | 6.00 | 2 | 0 | 5 | 4 | 156 | |
| SD3156 | 63.3 | 33.4 | 36 | 1 | 2 | 7 | 32 | 59 | 62.0 | 70 | 11.1 | 1.24 | 63.2 | 10.3 | 0.31 | 47.9 | 1 | 56.2 | 6.00 | 1 | 3 | 6 | 4 | 147 | |
| SD3164 | 62.8 | 33.8 | 38 | 1 | 0 | 6 | 26 | 68 | 64.4 | 75 | 11.3 | 1.40 | 59.1 | 10.4 | 0.36 | 50.8 | 2 | 58.4 | 6.25 | 1 | 4 | 5 | 4 | 153 | |
| SD8089 | 61.4 | 28.4 | 14 | 2 | 3 | 12 | 25 | 60 | 62.0 | 69 | 9.3 | 1.25 | 58.0 | 8.5 | 0.38 | 48.9 | 1 | 54.5 | 6.50 | 1 | 0 | 6 | 2 | 138 | |
| SD8088 | 60.8 | 28.8 | 10 | 3 | 8 | 20 | 28 | 44 | 60.7 | 55 | 10.2 | 1.29 | 57.3 | 9.8 | 0.36 | 49.9 | 1 | 52.3 | 7.00 | 1 | 3 | 6 | 2 | 153 | |
| SD3165 | 62.2 | 34.5 | 27 | 1 | 2 | 9 | 29 | 60 | 63.2 | 70 | 11.9 | 1.41 | 59.0 | 10.9 | 0.38 | 50.5 | 2 | 54.5 | 6.00 | 1 | 0 | 6 | 4 | 151 | |
| SD3161 | 62.5 | 33.2 | 16 | 1 | 4 | 17 | 37 | 42 | 55.8 | 46 | 10.4 | 1.37 | 53.8 | 9.8 | 0.34 | 45.9 | 1 | 58.5 | 7.00 | 1 | 0 | 6 | 4 | 156 | |
| MN91309 | 61.4 | 35.1 | 29 | 1 | 14 | 30 | 31 | 25 | 48.9 | 75 | 11.1 | 1.48 | 59.0 | 10.1 | 0.38 | 52.6 | 2 | 60.5 | 6.50 | 1 | 4 | 6 | 4 | 153 | |
| MN91324 | 62.3 | 33.4 | 32 | 1 | 2 | 4 | 19 | 75 | 67.2 | 78 | 10.4 | 1.51 | 57.2 | 9.4 | 0.42 | 49.6 | 1 | 60.7 | 5.50 | 1 | 0 | 4 | 4 | 147 | |
| SBE0050 | 61.4 | 32.1 | 15 | 1 | 1 | 4 | 26 | 69 | 65.8 | 71 | 10.4 | 1.49 | 49.1 | 9.7 | 0.37 | 47.5 | 1 | 58.5 | 8.50 | 1 | 4 | 6 | 2 | 147 | |
| MN92387 | 60.5 | 31.8 | 27 | 1 | 1 | 8 | 25 | 66 | 65.0 | 70 | 12.4 | 1.45 | 52.6 | 12.1 | 0.29 | 51.3 | 1 | 59.6 | 4.50 | 2 | 4 | 5 | 5 | 178 | |
| ND678 | 62.0 | 29.8 | 10 | 4 | 0 | 2 | 9 | 89 | 75.2 | 81 | 11.6 | 1.42 | 53.8 | 10.6 | 0.35 | 51.6 | 1 | 58.4 | 5.50 | 2 | 5 | 3 | 6 | 169 | |
| ND688 | 61.3 | 34.9 | 28 | 1 | 0 | 2 | 11 | 87 | 70.1 | 86 | 10.0 | 1.42 | 52.1 | 8.8 | 0.38 | 49.6 | 1 | 61.3 | 6.50 | 1 | 0 | 3 | 2 | 142 | |
| SBF0402 | 62.8 | 36.5 | 48 | 1 | 26 | 37 | 22 | 15 | 42.3 | 66 | 10.3 | 1.36 | 53.3 | 9.6 | 0.34 | 48.9 | 1 | 57.7 | 9.00 | 1 | 4 | 6 | 2 | 150 | |
| MT9354 | 63.3 | 33.1 | 35 | 1 | 1 | 5 | 23 | 71 | 65.7 | 79 | 12.6 | 1.39 | 54.2 | 11.9 | 0.35 | 54.6 | 2 | 56.4 | 5.50 | 3 | 3 | 5 | 6 | 189 | |

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Table 18(cont)

FARGO, ND

LOCATION: Pullman, WA

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | NIR HARD- NESS | WHEAT | | FLOUR EXT (%) | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C | | | LOAF VOL (cc) | | |
|----------|---------------|-------------|-----------|-----------|----------------|----|----|----------------------|-----------------|-----------------|---------------------|-------|------|------------|------------|-------------|----------------------|--------|------|-------------|---|---------------------|---|-----|
| | | | | | DISTRIBUTION | | | | PRO (14% mb) | ASH (14% mb) | | C | G | | | | | | T | | | | | |
| | | | | | A | B | C | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | Rating----- | | | | |
| MT9360 | 62.6 | 31.8 | 20 | 2 | 3 | 17 | 34 | 46 | 58.0 | 77 | 13.1 | 1.43 | 52.8 | 12.9 | 0.38 | 54.6 | 2 | 56.4 | 5.25 | 3 | 3 | 5 | 6 | 190 |
| N89-0562 | 63.4 | 39.7 | 58 | 0 | 0 | 4 | 23 | 73 | 65.6 | 82 | 13.4 | 1.56 | 55.7 | 12.9 | 0.39 | 55.0 | 2 | 60.5 | 3.75 | 3 | 3 | 3 | 6 | 182 |
| N92-2031 | 63.7 | 28.4 | 23 | 2 | 0 | 0 | 8 | 92 | 76.2 | 87 | 12.8 | 1.43 | 59.0 | 12.1 | 0.38 | 56.9 | 1 | 58.5 | 4.00 | 2 | 3 | 3 | 6 | 169 |
| N92-0248 | 62.2 | 27.5 | 13 | 3 | 0 | 6 | 29 | 65 | 64.9 | 69 | 12.6 | 1.50 | 60.5 | 11.7 | 0.32 | 55.0 | 1 | 56.8 | 3.50 | 2 | 3 | 3 | 6 | 173 |
| N92-0434 | 62.2 | 37.2 | 55 | 2 | 1 | 16 | 39 | 44 | 57.7 | 76 | 12.0 | 1.47 | 53.8 | 11.6 | 0.36 | 56.9 | 2 | 58.5 | 5.00 | 2 | 4 | 3 | 6 | 172 |
| FA993-40 | 60.0 | 32.8 | 30 | 3 | 0 | 4 | 22 | 74 | 65.9 | 70 | 11.0 | 1.49 | 55.0 | 10.4 | 0.38 | 50.8 | 1 | 54.4 | 5.50 | 2 | 3 | 3 | 4 | 164 |
| FA993-40 | 60.2 | 33.2 | 33 | 1 | 2 | 7 | 37 | 54 | 60.2 | 65 | 10.8 | 1.52 | 52.4 | 10.0 | 0.38 | 49.9 | 1 | 56.4 | 4.50 | 2 | 4 | 3 | 5 | 162 |
| BW173 | 61.8 | 35.5 | 38 | 2 | 1 | 1 | 15 | 83 | 69.0 | 77 | 11.8 | 1.44 | 50.9 | 11.4 | 0.36 | 52.9 | 1 | 56.4 | 5.00 | 2 | 3 | 6 | 6 | 170 |
| BW191 | 59.4 | 30.2 | 20 | 1 | 0 | 4 | 22 | 74 | 68.5 | 84 | 12.8 | 1.55 | 56.7 | 11.9 | 0.41 | 58.5 | 2 | 61.2 | 5.00 | 2 | 3 | 3 | 6 | 173 |
| HY417 | 62.5 | 38.9 | 44 | 0 | 3 | 19 | 43 | 35 | 54.2 | 57 | 9.8 | 1.38 | 55.0 | 9.6 | 0.33 | 49.9 | 1 | 58.5 | 7.50 | 1 | 5 | 3 | 4 | 153 |

DISTRIBUTION: A= % Soft

B= % Semi-Soft

C= % Semi-Hard

D= % Hard

RATINGS:

DOUGH CHAR (DC):

CRUMB COLOR (CC):

CRUMB GRAIN (CG):

CRUMB TEXTURE (CT):

0

STICKY-WEAK

YELLOW

IRREG, THICK

HARSH

3

PLIABLE

GREY

OPEN, THICK

COARSE

ELASTIC

DULL

CREAMY

6

BUCKY

BRIGHT WHITE

FINE

SILKY

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 19

FARGO, ND

LOCATION: *Tetonia, ID*

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | | NIR HARD- NESS | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C C | C G | C T | LOAF VOL (cc) |
|----------|---------------|-------------|-----------|-----------|----------------|----|----|----|----------------------|-------|-----------------|------------|------------------|-------|------|------------|------------|-------------|----------------------|--------|--------|--------|--------|---------------------|
| | | | | | DISTRIBUTION | | | | | PRO | ASH (14% mb) | EXT (%) | PRO (14 % mb) | | | | | | | | | | | |
| | | | | | A | B | C | D | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | INDEX | | | | | | | | | | |
| Marquis | 61.6 | 32.1 | 49 | 1 | 1 | 6 | 18 | 75 | 80.7 | 74 | 12.1 | 1.61 | 60.3 | 11.5 | 0.39 | 66.1 | 6 | 66.4 | 3.25 | 2 | 5 | 4 | 5 | 166 |
| Chris | 60.5 | 27.3 | 14 | 2 | 2 | 6 | 11 | 81 | 88.9 | 71 | 12.6 | 1.57 | 62.0 | 12.0 | 0.38 | 55.5 | 2 | 58.5 | 4.75 | 1 | 3 | 3 | 2 | 155 |
| Era | 60.0 | 27.9 | 14 | 4 | 6 | 8 | 9 | 77 | 84.9 | 60 | 11.2 | 1.57 | 45.8 | 10.3 | 0.39 | 52.6 | 2 | 56.8 | 6.50 | 1 | 3 | 6 | 2 | 148 |
| Stoa | 61.5 | 29.1 | 14 | 4 | 0 | 1 | 4 | 95 | 105.8 | 76 | 11.3 | 1.56 | 54.2 | 10.2 | 0.35 | 55.3 | 3 | 57.3 | 6.50 | 1 | 4 | 6 | 2 | 144 |
| Butte 86 | 62.4 | 31.7 | 44 | 1 | 1 | 1 | 3 | 95 | 110.1 | 84 | 11.2 | 1.55 | 60.5 | 9.8 | 0.36 | 55.5 | 2 | 58.9 | 6.00 | 1 | 0 | 6 | 2 | 132 |
| SD3151 | 62.4 | 28.3 | 6 | 2 | 0 | 0 | 2 | 98 | 122.0 | 82 | 11.8 | 1.57 | 54.4 | 10.9 | 0.41 | 53.8 | 2 | 58.5 | 6.50 | 1 | 4 | 6 | 1 | 139 |
| SD3156 | 62.9 | 31.5 | 36 | 1 | 1 | 3 | 15 | 81 | 94.0 | 62 | 11.5 | 1.53 | 57.0 | 10.5 | 0.32 | 53.2 | 2 | 56.4 | 5.75 | 1 | 0 | 6 | 1 | 152 |
| SD3164 | 63.1 | 33.0 | 31 | 0 | 0 | 4 | 14 | 82 | 94.5 | 75 | 11.8 | 1.49 | 60.0 | 10.5 | 0.36 | 57.6 | 3 | 58.5 | 5.50 | 2 | 4 | 6 | 4 | 160 |
| SD8089 | 59.0 | 27.1 | 8 | 4 | 1 | 3 | 10 | 86 | 98.6 | 60 | 10.9 | 1.41 | 58.8 | 10.1 | 0.36 | 53.8 | 2 | 54.4 | 5.00 | 1 | 4 | 6 | 5 | 145 |
| SD8088 | 58.4 | 26.8 | 7 | 5 | 4 | 10 | 19 | 67 | 74.3 | 59 | 13.6 | 1.32 | 58.4 | 13.3 | 0.38 | 60.5 | 3 | 60.3 | 3.25 | 3 | 3 | 6 | 5 | 200 |
| SD3165 | 63.5 | 34.1 | 30 | 1 | 1 | 4 | 16 | 79 | 80.4 | 79 | 11.3 | 1.55 | 54.4 | 9.8 | 0.36 | 55.0 | 2 | 58.5 | 6.00 | 1 | 0 | 6 | 4 | 144 |
| SD3161 | 62.7 | 28.5 | 7 | 4 | 2 | 5 | 14 | 79 | 84.3 | 54 | 10.4 | 1.47 | 49.1 | 9.4 | 0.33 | 49.9 | 1 | 54.3 | 8.50 | 1 | 0 | 6 | 2 | 135 |
| MN91309 | 61.5 | 32.6 | 27 | 2 | 1 | 5 | 14 | 80 | 87.9 | 75 | 11.4 | 1.50 | 55.3 | 10.4 | 0.35 | 54.3 | 2 | 57.0 | 6.25 | 1 | 4 | 5 | 5 | 147 |
| MN91324 | 60.9 | 26.9 | 12 | 5 | 2 | 4 | 9 | 85 | 86.7 | 83 | 11.6 | 1.47 | 57.6 | 10.3 | 0.39 | 55.3 | 2 | 59.7 | 5.00 | 1 | 4 | 4 | 5 | 156 |
| SBE0050 | 60.9 | 28.5 | 6 | 4 | 2 | 4 | 18 | 76 | 74.6 | 67 | 10.9 | 1.54 | 50.0 | 10.1 | 0.37 | 50.8 | 2 | 56.4 | 8.00 | 1 | 0 | 6 | 1 | 132 |
| MN92387 | 61.8 | 30.6 | 29 | 2 | 1 | 12 | 24 | 63 | 71.3 | 54 | 13.1 | 1.52 | 56.3 | 12.3 | 0.31 | 53.8 | 2 | 56.4 | 3.50 | 1 | 4 | 4 | 5 | 168 |
| ND678 | 60.5 | 26.5 | 6 | 5 | 1 | 2 | 8 | 89 | 96.5 | 83 | 13.4 | 1.45 | 56.5 | 12.7 | 0.33 | 59.3 | 3 | 60.3 | 3.50 | 3 | 6 | 3 | 6 | 185 |
| ND688 | 60.9 | 34.0 | 50 | 4 | 1 | 6 | 23 | 70 | 71.8 | 82 | 12.1 | 1.46 | 56.9 | 10.4 | 0.34 | 55.3 | 2 | 59.1 | 5.00 | 1 | 3 | 3 | 6 | 166 |
| SBF0402 | 60.2 | 29.1 | 23 | 3 | 3 | 8 | 30 | 59 | 63.4 | 67 | 12.2 | 1.43 | 52.3 | 11.5 | 0.34 | 54.3 | 2 | 54.3 | 6.50 | 1 | 4 | 3 | 6 | 169 |
| MT9354 | 62.6 | 34.4 | 34 | 1 | 1 | 5 | 26 | 68 | 74.7 | 72 | 11.4 | 1.47 | 52.6 | 9.9 | 0.37 | 51.3 | 1 | 54.3 | 5.50 | 1 | 5 | 6 | 5 | 154 |

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FARGO, ND

Table 19(cont)

LOCATION: Tetonia, ID

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS | | | | HARDNESS | | NIR | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D | Rating | | | | | | LOAF VOL (cc) |
|----------|---------------|-------------|-----------|-----------|-------|----|----|----|----------|---------------|------|-------|-----------------|------------|------|------------------|---|------------|------------|-------------|----------------------|---|--------|---|---|-----|--|--|---------------------|
| | | | | | A | B | C | D | INDEX | HARD- NESS | | PRO | ASH (14% mb) | EXT (%) | PRO | ASH (14 % mb) | C | | | | | | C | G | T | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MT9360 | 62.5 | 29.8 | 9 | 4 | 3 | 6 | 10 | 81 | 91.6 | 67 | 13.0 | 1.51 | 50.5 | 12.6 | 0.36 | 58.6 | 4 | 4.00 | 58.6 | 3 | 5 | 5 | 5 | 6 | 6 | 188 | | | |
| N89-0562 | 61.5 | 33.0 | 15 | 2 | 1 | 4 | 21 | 74 | 79.4 | 67 | 12.7 | 1.77 | 44.7 | 11.5 | 0.40 | 54.3 | 2 | 4.25 | 58.5 | 1 | 4 | 4 | 4 | 6 | 6 | 168 | | | |
| N92-2031 | 62.4 | 26.9 | 11 | 3 | 0 | 0 | 4 | 96 | 99.6 | 70 | 12.6 | 1.60 | 52.6 | 11.9 | 0.39 | 59.3 | 4 | 4.00 | 59.3 | 2 | 3 | 3 | 3 | 6 | 6 | 173 | | | |
| N92-0248 | 60.5 | 25.6 | 9 | 4 | 1 | 7 | 17 | 75 | 81.0 | 66 | 13.6 | 1.55 | 54.7 | 12.6 | 0.34 | 59.3 | 2 | 3.00 | 59.3 | 2 | 4 | 4 | 4 | 6 | 6 | 180 | | | |
| N92-0434 | 58.6 | 28.6 | 20 | 3 | 2 | 5 | 16 | 77 | 79.5 | 73 | 13.3 | 1.63 | 51.2 | 13.1 | 0.36 | 62.7 | 5 | 4.25 | 62.7 | 3 | 3 | 5 | 5 | 6 | 6 | 195 | | | |
| FA993-40 | 57.8 | 28.4 | 11 | 3 | 2 | 8 | 21 | 69 | 70.2 | 58 | 11.5 | 1.40 | 44.6 | 10.8 | 0.35 | 54.6 | 2 | 4.75 | 56.8 | 1 | 3 | 6 | 6 | 2 | 2 | 165 | | | |
| FA993-40 | 59.7 | 31.0 | 25 | 6 | 6 | 16 | 34 | 44 | 59.8 | 63 | 11.4 | 1.59 | 45.8 | 10.1 | 0.35 | 56.2 | 3 | 4.50 | 58.5 | 1 | 4 | 5 | 5 | 2 | 2 | 154 | | | |
| BW191 | 62.2 | 31.9 | 33 | 1 | 1 | 6 | 15 | 78 | 88.0 | 84 | 12.2 | 1.55 | 50.2 | 11.4 | 0.38 | 58.2 | 3 | 4.00 | 58.2 | 1 | 4 | 4 | 4 | 5 | 5 | 163 | | | |
| HY417 | 62.5 | 37.5 | 46 | 1 | 7 | 21 | 21 | 51 | 66.3 | 61 | 10.7 | 1.51 | 50.5 | 9.8 | 0.31 | 53.8 | 2 | 6.25 | 56.4 | 1 | 5 | 5 | 5 | 2 | 2 | 146 | | | |

DISTRIBUTION: A= % Soft

B= % Semi-Soft

C= % Semi-Hard

D= % Hard

| RATINGS: | 0 | | | 3 | | | 6 | | |
|----------|--------------|--|--|-------------|--|--|--------------|--|--|
| | STICKY-WEAK | | | PLIABLE | | | ELASTIC | | |
| | YELLOW | | | GREY | | | DULL | | |
| | IRREG, THICK | | | OPEN, THICK | | | COARSE | | |
| | HARSII | | | COARSE | | | BRIGHT WHITE | | |
| | | | | | | | FINE | | |
| | | | | | | | SILKY | | |

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Table 20

| REGION: <i>Northeast</i> | | FARGO, ND | | | | | | | | | | | | | | | | | | | | |
|--------------------------|---------------|-------------|-------------|-------------|-------------|---------------|-------------|-----------------|-------------|------------------|------------|-------------|-------------|----------------------|------------|------------|------------|------------|------------|---------------------|------------|--------------|
| VARIETY | TW (lb/bu) | KWT (gr) | SKWCS | | NIR | WHEAT | | FLOUR | | FLOUR | | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C C | C C | C G | C T | LOAF VOL (cc) | | |
| | | | HARDNESS | INDEX | | HARD- NESS | PRO | ASH (14% mb) | EXT (%) | PRO (14 % mb) | ASH | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| Std | Butle 86 | 56.9 | 30.6 | 68.6 | 81.3 | 15.9 | 1.78 | 57.5 | 14.6 | 0.43 | 2.8 | 60.8 | 3.25 | 2.8 | 3.4 | 4.4 | 5.2 | 2.8 | 3.4 | 4.4 | 5.2 | 195.8 |
| | Marquis | 55.3 | 27.4 | <u>69.8</u> | 73.1 | 15.8 | 2.00 | 51.3 | <u>15.0</u> | 0.74 | 2.8 | 58.8 | 2.90 | 2.8 | 2.8 | <u>4.8</u> | 4.8 | 2.8 | 2.8 | <u>4.8</u> | 4.8 | 185.6 |
| | Chris | 56.4 | 26.6 | <u>69.6</u> | 75.7 | 15.9 | 1.95 | 55.8 | <u>15.4</u> | 0.51 | 2.8 | 60.1 | 2.90 | 2.8 | <u>3.0</u> | <u>3.6</u> | <u>4.6</u> | <u>3.0</u> | <u>3.6</u> | <u>4.6</u> | 4.4 | <u>199.4</u> |
| | Era | 55.1 | 25.7 | <u>69.9</u> | 68.6 | 14.3 | 1.95 | 56.6 | 13.2 | 0.54 | 2.2 | 56.9 | 4.15 | 2.8 | <u>3.6</u> | <u>4.6</u> | 4.4 | 2.8 | <u>3.6</u> | <u>4.6</u> | 4.4 | 195.0 |
| | Stoa | 55.1 | 27.5 | <u>72.1</u> | 76.0 | 15.7 | 1.91 | 56.0 | <u>14.9</u> | 0.45 | <u>3.4</u> | 59.6 | 4.20 | <u>3.4</u> | <u>3.0</u> | 3.2 | 4.4 | <u>3.0</u> | 3.2 | 4.4 | 5.2 | <u>200.6</u> |
| | SD3151 | <u>57.6</u> | 29.7 | 68.0 | 70.4 | <u>16.2</u> | 1.89 | 51.3 | <u>15.3</u> | 0.46 | 2.8 | 58.2 | 4.70 | 2.8 | 2.8 | <u>4.6</u> | <u>5.4</u> | 2.8 | 2.4 | <u>4.6</u> | <u>5.4</u> | <u>199.2</u> |
| | SD3156 | <u>58.6</u> | 30.2 | 63.9 | 72.3 | 15.8 | 1.84 | 55.3 | 14.5 | <u>0.39</u> | 2.8 | 59.8 | 3.45 | 2.8 | <u>3.0</u> | 2.8 | <u>5.0</u> | <u>3.0</u> | 2.8 | <u>5.0</u> | <u>5.6</u> | 195.8 |
| | SD3164 | <u>59.7</u> | <u>33.7</u> | 63.4 | 80.8 | <u>15.9</u> | 1.80 | 56.8 | <u>14.9</u> | <u>0.41</u> | <u>3.4</u> | <u>62.0</u> | 3.60 | <u>3.4</u> | <u>3.0</u> | <u>4.2</u> | <u>4.8</u> | <u>3.0</u> | <u>4.2</u> | <u>4.8</u> | <u>5.8</u> | <u>208.6</u> |
| | SD8089 | <u>57.4</u> | 28.1 | 65.2 | 74.4 | 14.7 | <u>1.69</u> | 55.4 | 13.7 | 0.43 | 2.2 | 57.9 | 3.55 | 2.2 | <u>3.0</u> | <u>3.6</u> | <u>5.6</u> | <u>3.0</u> | <u>3.6</u> | <u>5.6</u> | 5.2 | 192.6 |
| | SD8088 | <u>58.3</u> | 28.2 | 65.8 | 69.1 | 14.8 | <u>1.63</u> | 52.3 | 13.5 | <u>0.42</u> | 2.0 | 57.3 | 3.75 | 2.0 | 2.6 | <u>5.0</u> | <u>5.2</u> | 2.6 | <u>5.0</u> | <u>5.2</u> | 5.0 | 195.0 |
| | SD3165 | <u>58.2</u> | <u>33.5</u> | 63.6 | 78.3 | <u>16.2</u> | 1.90 | 53.2 | <u>15.0</u> | 0.45 | 2.6 | <u>61.6</u> | 3.15 | 2.6 | 2.8 | 3.0 | <u>5.2</u> | 2.8 | 3.0 | <u>5.2</u> | 5.2 | <u>202.8</u> |
| | SD3161 | <u>58.9</u> | 29.2 | 65.3 | 57.1 | 15.5 | <u>1.71</u> | 49.5 | 14.5 | <u>0.39</u> | <u>3.2</u> | 58.0 | 5.15 | <u>3.2</u> | <u>3.0</u> | <u>3.8</u> | <u>5.0</u> | <u>3.0</u> | <u>3.8</u> | <u>5.0</u> | 5.0 | <u>198.2</u> |
| | MN91309 | <u>57.4</u> | <u>31.5</u> | 64.5 | 77.8 | 15.8 | <u>1.76</u> | 52.8 | 14.2 | <u>0.42</u> | 2.6 | 59.4 | 4.00 | 2.6 | 2.8 | <u>4.6</u> | 4.0 | 2.8 | <u>4.6</u> | 4.0 | <u>5.4</u> | <u>206.6</u> |
| | MN91324 | <u>58.0</u> | 28.7 | 67.6 | <u>84.4</u> | 15.8 | 1.83 | 55.6 | <u>14.6</u> | 0.45 | 2.8 | 60.7 | 3.35 | 2.8 | 2.6 | 3.4 | <u>4.6</u> | 2.6 | 3.4 | <u>4.6</u> | 5.2 | <u>211.4</u> |
| | SBE0050 | <u>57.2</u> | 28.4 | <u>68.8</u> | 70.3 | 14.8 | 1.80 | 50.1 | 13.7 | 0.46 | 2.4 | 59.3 | 4.55 | 2.4 | <u>3.0</u> | 3.4 | 3.4 | <u>3.0</u> | 3.4 | 3.4 | <u>5.4</u> | <u>207.4</u> |
| | MN92387 | <u>57.9</u> | <u>30.9</u> | 59.0 | 67.6 | 15.3 | 1.82 | 51.3 | 14.1 | <u>0.40</u> | 1.6 | 57.6 | 2.95 | 1.6 | 2.4 | 3.0 | <u>4.8</u> | 2.4 | 3.0 | <u>4.8</u> | 5.0 | 194.0 |
| | ND678 | <u>58.4</u> | 28.7 | <u>74.1</u> | <u>85.5</u> | 15.5 | <u>1.70</u> | 52.1 | 14.1 | <u>0.41</u> | 2.8 | 60.1 | 3.19 | 2.8 | 2.8 | <u>4.3</u> | 4.0 | 2.8 | <u>4.3</u> | 4.0 | <u>5.3</u> | <u>196.0</u> |
| | ND688 | 56.8 | <u>30.9</u> | <u>70.5</u> | <u>82.0</u> | 15.6 | 1.81 | 53.6 | 14.3 | 0.43 | 2.8 | 59.6 | 3.35 | 2.8 | 2.8 | 0.8 | 4.4 | 2.8 | 0.8 | 4.4 | 4.6 | 188.4 |
| | SBF0402 | <u>58.4</u> | <u>32.7</u> | 56.5 | 69.1 | <u>16.2</u> | 1.82 | 53.9 | <u>15.1</u> | <u>0.40</u> | <u>3.6</u> | 60.3 | 4.50 | <u>3.6</u> | <u>3.0</u> | 2.6 | <u>5.0</u> | <u>3.0</u> | 2.6 | <u>5.0</u> | <u>5.8</u> | <u>202.0</u> |

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WHEAT QUALITY LAB

Table 20(cont)

| REGION: <i>Northeast</i> | | FARGO, ND | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|---------------|-------------|----------|-------|---------------|------|-----------------|------------|-------|------------------|-------|------|---------------|------------------|------|-----|-----|---|-------------|-----|-----|-----|---|-------|------|--|
| VARIETY | TW (lb/bu) | KWT (gr) | SKWCS | | NIR | | WHEAT | | FLOUR | | FLOUR | | MIX | | BAKE | | MIX | | D | | C | | C | | LOAF | |
| | | | HARDNESS | INDEX | HARD- NESS | PRO | ASH (14% mb) | EXT (%) | PRO | ASH (14 % mb) | PAT | ABS | TIME (min) | -----Rating----- | | | | | | | | | | | | |
| | | | | | | | | | | | | | | C | C | C | G | T | VOL (cc) | | | | | | | |
| MT9354 | 54.6 | 27.9 | 71.1 | | 74.9 | 16.0 | 1.85 | 49.1 | 14.9 | 0.45 | 3.4 | 59.5 | 4.70 | 3.2 | 2.4 | 3.6 | 5.6 | | 3.2 | 2.4 | 3.6 | 5.6 | | 197.6 | | |
| MT9360 | 55.6 | 26.4 | 61.2 | | 65.4 | 15.9 | 2.04 | 45.1 | 15.2 | 0.52 | 3.2 | 59.0 | 3.85 | 3.0 | 3.6 | 5.0 | 4.8 | | 3.0 | 3.6 | 5.0 | 4.8 | | 196.8 | | |
| N89-0562 | 56.7 | 30.8 | 64.7 | | 71.7 | 16.3 | 2.12 | 44.9 | 15.0 | 0.52 | 1.8 | 58.8 | 3.70 | 2.8 | 2.0 | 4.6 | 5.0 | | 2.8 | 2.0 | 4.6 | 5.0 | | 197.0 | | |
| N92-2031 | 59.6 | 29.3 | 72.6 | | 88.9 | 16.6 | 1.88 | 54.2 | 15.7 | 0.46 | 2.8 | 60.5 | 3.05 | 3.0 | 3.6 | 4.0 | 5.2 | | 3.0 | 3.6 | 4.0 | 5.2 | | 198.6 | | |
| N92-0248 | 56.7 | 25.3 | 62.4 | | 64.1 | 14.9 | 1.82 | 53.1 | 13.9 | 0.41 | 2.0 | 56.3 | 3.25 | 2.8 | 3.6 | 4.8 | 5.0 | | 2.8 | 3.6 | 4.8 | 5.0 | | 192.4 | | |
| N92-0434 | 56.5 | 31.1 | 63.4 | | 64.4 | 15.2 | 1.83 | 48.8 | 14.2 | 0.42 | 3.0 | 60.4 | 3.95 | 3.0 | 2.0 | 4.8 | 5.2 | | 3.0 | 2.0 | 4.8 | 5.2 | | 205.6 | | |
| A993-401 | 53.6 | 27.7 | 56.5 | | 56.6 | 15.7 | 1.91 | 47.2 | 14.8 | 0.45 | 2.4 | 59.1 | 3.15 | 3.0 | 2.2 | 3.4 | 4.6 | | 3.0 | 2.2 | 3.4 | 4.6 | | 200.6 | | |
| A993-402 | 54.7 | 26.7 | 58.5 | | 66.3 | 15.5 | 1.83 | 51.2 | 14.5 | 0.43 | 3.0 | 60.5 | 3.20 | 2.6 | 0.6 | 3.2 | 4.6 | | 2.6 | 0.6 | 3.2 | 4.6 | | 190.2 | | |
| BW173 | 57.5 | 29.9 | 66.4 | | 85.4 | 16.6 | 1.81 | 56.8 | 15.8 | 0.42 | 3.0 | 61.3 | 3.30 | 3.0 | 3.4 | 4.8 | 5.8 | | 3.0 | 3.4 | 4.8 | 5.8 | | 204.8 | | |
| BW191 | 56.4 | 30.4 | 62.2 | | 78.2 | 16.8 | 1.84 | 54.7 | 15.7 | 0.46 | 3.2 | 61.8 | 3.45 | 2.6 | 2.2 | 4.4 | 5.8 | | 2.6 | 2.2 | 4.4 | 5.8 | | 216.0 | | |
| 11Y417 | 55.5 | 29.4 | 54.1 | | 49.7 | 13.4 | 1.83 | 48.1 | 12.2 | 0.46 | 2.4 | 57.3 | 5.15 | 2.6 | 2.0 | 4.4 | 5.0 | | 2.6 | 2.0 | 4.4 | 5.0 | | 197.6 | | |
| MN2535 | 60.9 | 28.1 | 67.4 | | 72.8 | 17.3 | 1.90 | 49.6 | 16.7 | 0.41 | 2.8 | 61.3 | 2.88 | 3.0 | 1.5 | 3.3 | 4.8 | | 3.0 | 1.5 | 3.3 | 4.8 | | 197.0 | | |

| RATINGS: | 0 | | | 3 | | 6 | |
|----------|---------------------|--------------|---------|-------------|--------|--------------|--|
| | DOUGH CHAR (DC): | STICKY-WEAK | PLIABLE | ELASTIC | | BUCKY | |
| | CRUMB COLOR (CC): | YELLOW | GREY | DULL | CREAMY | BRIGHT WHITE | |
| | CRUMB GRAIN (CG): | IRREG, THICK | | OPEN, THICK | | FINE | |
| | CRUMB TEXTURE (CT): | HARSH | | COARSE | | SILKY | |

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 21

REGION: *South-east*

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | SKWCS | | NIR | WHEAT | | FLOUR | | MIX | BAKE | | MIX TIME (min) | D | | C | | LOAF VOL (cc) |
|---------|---------------|-------------|-------------|-------------|---------------|-------------|-----------------|-------------|------------------|-------------|------------|-------------|----------------------|------------|------------|------------|------------|---------------------|
| | | | HARDNESS | INDEX | HARD- NESS | PRO | ASH (14% mb) | EXT (%) | PRO (14 % mb) | PAT | ABS | ABS | | C | C | C | C | |
| Std | Butte 86 | 59.7 | 31.9 | 67.7 | 82.1 | 14.4 | 1.82 | 57.0 | 12.9 | 0.39 | 2.6 | 59.0 | 3.75 | 2.6 | 3.6 | 3.8 | 5.2 | 182.0 |
| Marquis | | 56.0 | 24.5 | <u>77.4</u> | | 13.8 | 1.86 | 56.5 | 12.5 | 0.47 | 2.4 | 56.3 | 4.35 | 2.2 | <u>3.8</u> | <u>4.8</u> | 3.6 | 172.6 |
| | Chris | 58.8 | 26.0 | <u>71.9</u> | | <u>14.9</u> | <u>1.79</u> | <u>57.2</u> | <u>14.1</u> | 0.42 | 2.2 | 57.9 | 3.90 | <u>2.8</u> | <u>4.2</u> | <u>4.6</u> | 4.4 | <u>197.2</u> |
| Era | | 57.2 | 26.0 | <u>72.7</u> | | 13.4 | 1.84 | 56.5 | 11.9 | 0.43 | 2.0 | 56.4 | 5.10 | 2.6 | <u>4.4</u> | <u>4.0</u> | 4.0 | <u>188.4</u> |
| | Stoa | 58.1 | 28.2 | <u>71.9</u> | | 14.2 | 1.85 | 55.9 | <u>13.3</u> | 0.44 | <u>3.4</u> | <u>60.4</u> | 5.10 | <u>3.0</u> | 3.2 | <u>4.8</u> | 4.8 | <u>189.8</u> |
| SD3151 | | <u>60.0</u> | 29.7 | <u>69.7</u> | | <u>14.9</u> | 1.89 | 51.5 | <u>13.9</u> | 0.44 | 2.4 | <u>59.1</u> | 5.50 | 2.6 | 2.4 | <u>4.0</u> | 5.2 | <u>184.4</u> |
| | SD3156 | <u>61.6</u> | 30.1 | 66.2 | 68.8 | 13.7 | 1.82 | 55.7 | 12.3 | <u>0.35</u> | <u>2.8</u> | 57.5 | 4.45 | 2.6 | 3.2 | <u>4.8</u> | 5.2 | <u>183.8</u> |
| SD3164 | | <u>61.1</u> | 30.7 | <u>70.6</u> | | <u>14.7</u> | 1.89 | 54.1 | <u>13.7</u> | 0.40 | <u>4.2</u> | <u>60.7</u> | 5.25 | <u>2.8</u> | <u>4.2</u> | <u>4.8</u> | <u>5.6</u> | <u>201.8</u> |
| | SD8089 | 58.8 | 28.3 | 64.6 | 73.3 | 13.6 | <u>1.72</u> | 54.8 | 12.3 | 0.41 | 2.4 | 58.2 | 4.95 | 2.6 | 3.6 | <u>5.0</u> | 4.8 | <u>188.0</u> |
| SD8088 | | 59.2 | 27.6 | <u>68.6</u> | | 13.9 | <u>1.73</u> | 51.4 | 12.5 | 0.43 | 2.4 | 57.5 | 5.20 | <u>2.8</u> | 3.4 | <u>5.6</u> | 5.2 | <u>193.4</u> |
| | SD3165 | <u>60.6</u> | <u>33.4</u> | 64.0 | 78.0 | <u>14.5</u> | 1.85 | 50.0 | <u>13.3</u> | 0.41 | <u>3.0</u> | <u>60.2</u> | 4.30 | <u>2.8</u> | 2.8 | <u>4.4</u> | <u>5.6</u> | <u>194.4</u> |
| SD3161 | | <u>60.7</u> | 28.4 | 66.0 | 57.5 | 13.7 | <u>1.70</u> | 45.4 | 12.6 | <u>0.38</u> | <u>2.8</u> | 59.0 | 6.60 | <u>2.8</u> | 2.6 | <u>4.6</u> | 4.8 | <u>185.8</u> |
| | MN91309 | 58.7 | 30.7 | 65.9 | 74.2 | 13.8 | <u>1.72</u> | 49.2 | 12.7 | 0.42 | <u>4.0</u> | <u>60.5</u> | 5.05 | <u>3.0</u> | <u>4.0</u> | <u>4.6</u> | <u>5.4</u> | <u>191.8</u> |
| MN91324 | | <u>59.9</u> | 28.7 | <u>73.0</u> | | 14.1 | <u>1.81</u> | 50.2 | 12.8 | 0.45 | <u>3.4</u> | <u>61.0</u> | 4.15 | <u>2.8</u> | 3.6 | <u>5.2</u> | 5.0 | <u>193.4</u> |
| | SBE0050 | 58.7 | 27.8 | <u>70.9</u> | 66.9 | 13.7 | <u>1.74</u> | 42.4 | 12.7 | 0.44 | <u>3.8</u> | <u>59.9</u> | 6.15 | <u>3.0</u> | <u>4.0</u> | <u>4.0</u> | <u>5.4</u> | <u>195.0</u> |
| MN92387 | | <u>60.3</u> | <u>32.1</u> | 61.1 | 70.2 | 14.0 | 1.90 | 46.6 | <u>13.0</u> | <u>0.38</u> | 1.8 | 57.7 | 3.85 | <u>2.8</u> | 3.4 | <u>4.4</u> | 4.6 | 181.2 |
| | ND678 | <u>60.1</u> | 29.3 | <u>74.1</u> | | <u>14.6</u> | <u>1.78</u> | 47.0 | <u>13.3</u> | <u>0.38</u> | <u>3.2</u> | <u>61.1</u> | 3.60 | <u>2.8</u> | <u>5.2</u> | <u>4.0</u> | 5.2 | <u>194.4</u> |
| ND688 | | 58.5 | 30.4 | <u>72.4</u> | | <u>14.5</u> | <u>1.76</u> | 49.3 | <u>13.0</u> | 0.40 | <u>3.2</u> | <u>60.0</u> | 4.10 | 2.6 | 3.0 | <u>5.6</u> | 5.0 | <u>186.4</u> |
| | SBF0402 | 59.6 | 30.8 | 62.5 | 69.4 | 14.4 | <u>1.74</u> | 50.0 | <u>13.6</u> | <u>0.38</u> | <u>4.2</u> | <u>60.3</u> | 6.45 | <u>3.0</u> | 3.0 | 3.8 | <u>5.4</u> | <u>199.4</u> |

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 21(cont)

| REGION: Southeast | | | FARGO, ND | | | | | | | | | | | | | | | | | |
|-------------------|---------------|-------------|-----------|-------|------|-------|------|-------|-----------------|------------|-----|------|------|----------------------|-----|-----|-----|---|-------|---------------------|
| VARIETY | TW (lb/bu) | KWT (gr) | SKWCS | | NIR | WHEAT | | FLOUR | | FLOUR | | MIX | BAKE | MIX TIME (min) | D | C | C | C | T | LOAF VOL (cc) |
| | | | HARDNESS | INDEX | | HARD- | NESS | PRO | ASH (14% mb) | EXT (%) | PRO | | | | | | | | | |
| MT9354 | 55.2 | 26.7 | 75.9 | | 77.8 | 15.5 | 1.97 | 48.7 | 14.5 | 0.53 | 4.4 | 60.6 | 5.15 | 2.8 | 2.8 | 5.2 | 5.8 | | 202.4 | |
| MT9360 | 56.8 | 25.0 | 69.0 | | 68.6 | 14.8 | 1.88 | 43.6 | 13.9 | 0.48 | 3.6 | 60.1 | 4.65 | 3.0 | 2.2 | 4.8 | 5.4 | | 199.2 | |
| N89-0562 | 58.0 | 29.4 | 72.5 | | 71.1 | 15.5 | 2.15 | 43.2 | 14.5 | 0.52 | 3.4 | 60.6 | 4.80 | 3.0 | 2.4 | 4.0 | 5.6 | | 196.4 | |
| N92-2031 | 61.0 | 28.3 | 76.9 | | 85.9 | 15.2 | 1.85 | 50.4 | 13.9 | 0.44 | 3.2 | 60.0 | 4.30 | 3.0 | 3.8 | 4.6 | 5.4 | | 184.2 | |
| N92-0248 | 59.7 | 26.4 | 65.2 | | 66.1 | 14.0 | 1.82 | 50.4 | 13.1 | 0.37 | 2.2 | 56.6 | 3.75 | 2.6 | 3.4 | 4.0 | 4.2 | | 181.8 | |
| N92-0434 | 58.6 | 31.5 | 69.0 | | 69.8 | 14.2 | 1.74 | 47.7 | 13.3 | 0.41 | 3.6 | 60.6 | 4.60 | 3.0 | 1.8 | 4.6 | 5.0 | | 195.0 | |
| A993-401 | 56.2 | 29.7 | 64.0 | | 62.1 | 14.3 | 1.83 | 46.9 | 13.2 | 0.43 | 2.4 | 58.0 | 4.35 | 2.6 | 3.0 | 4.4 | 4.8 | | 191.4 | |
| A993-402 | 55.1 | 27.7 | 67.1 | | 63.7 | 14.3 | 1.86 | 49.7 | 13.2 | 0.48 | 3.4 | 61.1 | 3.65 | 2.8 | 2.0 | 4.8 | 4.8 | | 184.0 | |
| BW173 | 57.7 | 28.2 | 71.3 | | 79.7 | 15.2 | 1.83 | 53.1 | 14.3 | 0.41 | 3.4 | 59.9 | 4.25 | 2.8 | 3.6 | 4.8 | 5.0 | | 195.6 | |
| BW191 | 58.0 | 30.5 | 67.2 | | 78.5 | 15.3 | 1.87 | 51.6 | 14.3 | 0.44 | 3.8 | 60.5 | 3.55 | 3.0 | 3.4 | 4.6 | 5.8 | | 201.4 | |
| HY417 | 56.4 | 28.8 | 59.8 | | 53.7 | 12.8 | 1.80 | 47.9 | 11.7 | 0.43 | 2.6 | 59.3 | 6.10 | 2.6 | 4.4 | 4.8 | 5.2 | | 187.2 | |
| MN2535 | 63.7 | 29.4 | 73.7 | | 67.0 | 15.9 | 1.82 | 47.2 | 15.7 | 0.35 | 3.0 | 61.3 | 3.50 | 3.0 | 3.3 | 4.7 | 5.7 | | 209.7 | |

| RATINGS: | 0 | | | 3 | | 6 | |
|----------|---------------------|--------------|---------|-------------|--------|--------------|--|
| | DOUGH CHAR (DC): | STICKY-WEAK | PLIABLE | ELASTIC | | BUCKY | |
| | CRUMB COLOR (CC): | YELLOW | GREY | DULL | CREAMY | BRIGHT WHITE | |
| | CRUMB GRAIN (CG): | IRREG, THICK | | OPEN, THICK | | FINE | |
| | CRUMB TEXTURE (CT): | HARSH | | COARSE | | SILKY | |

**USDA / ARS
WHEAT QUALITY LAB**

REGION: *Midwest*

| VARIETY | TW (lb/bu) | KWT (gr) | SKWCS HARDNESS INDEX | NIR HARD- NESS | WHEAT | | FLOUR | | MIX PAT | BAKE ABS | MIX TIME (min) | D | C | | | LOAF VOL (cc) | | | |
|--------------|---------------|-------------|----------------------------|----------------------|-------|-----------------|------------|-------------|------------|-------------|----------------------|-----|-----|------------------|-----|---------------------|---|---|--|
| | | | | | PRO | ASH (14% mb) | EXT (%) | FLOUR | | | | | PRO | ASH (14 % mb) | C | | G | T | |
| | | | | | | | | Rating----- | | | | | | | | | | | |
| Std Butte 86 | 61.4 | 35.5 | 61.7 | 87.5 | 14.4 | 1.57 | 60.6 | 13.5 | 0.34 | 2.5 | 2.50 | 2.5 | 3.3 | 4.5 | 4.8 | 177.8 | | | |
| Marquis | 59.4 | 31.6 | 60.3 | 78.6 | 14.3 | 1.61 | 58.4 | 13.6 | 0.37 | 2.3 | 2.88 | 2.3 | 4.3 | 4.0 | 4.8 | 182.0 | | | |
| Chris | 58.9 | 27.9 | 67.6 | 82.6 | 14.8 | 1.58 | 60.3 | 14.2 | 0.35 | 2.5 | 3.19 | 2.5 | 3.0 | 4.0 | 5.3 | 189.5 | | | |
| Era | 59.5 | 30.1 | 64.1 | 77.5 | 13.0 | 1.57 | 59.5 | 12.0 | 0.40 | 2.8 | 4.19 | 2.5 | 3.3 | 3.5 | 3.8 | 185.3 | | | |
| Stoa | 60.2 | 31.7 | 66.0 | 80.8 | 14.0 | 1.60 | 61.6 | 13.4 | 0.35 | 3.0 | 3.63 | 2.5 | 3.5 | 4.5 | 5.8 | 193.5 | | | |
| SD3151 | 60.9 | 33.1 | 60.6 | 80.2 | 15.3 | 1.60 | 57.6 | 14.8 | 0.39 | 2.3 | 3.75 | 2.5 | 3.5 | 3.8 | 5.3 | 194.8 | | | |
| SD3156 | 61.8 | 34.0 | 56.6 | 73.1 | 13.6 | 1.52 | 60.4 | 12.9 | 0.32 | 2.0 | 3.38 | 3.0 | 3.0 | 3.8 | 4.8 | 180.5 | | | |
| SD3164 | 62.3 | 35.8 | 60.3 | 79.6 | 15.0 | 1.59 | 61.4 | 14.2 | 0.35 | 3.0 | 3.56 | 2.5 | 4.0 | 5.0 | 6.0 | 192.3 | | | |
| SD8089 | 60.4 | 30.6 | 61.0 | 74.2 | 13.2 | 1.47 | 60.6 | 12.3 | 0.38 | 1.8 | 2.94 | 1.8 | 3.5 | 4.5 | 3.8 | 173.8 | | | |
| SD8088 | 60.2 | 30.6 | 57.8 | 68.7 | 13.5 | 1.43 | 58.4 | 12.8 | 0.37 | 1.5 | 3.44 | 2.0 | 4.3 | 4.8 | 4.3 | 187.5 | | | |
| SD3165 | 61.6 | 37.7 | 55.0 | 79.9 | 15.2 | 1.66 | 59.7 | 14.5 | 0.37 | 2.3 | 2.50 | 2.5 | 3.8 | 4.5 | 5.3 | 191.5 | | | |
| SD3161 | 62.1 | 32.4 | 55.1 | 65.2 | 13.6 | 1.46 | 55.6 | 13.1 | 0.33 | 2.5 | 3.94 | 2.5 | 3.3 | 4.5 | 4.8 | 195.0 | | | |
| MN91309 | 61.0 | 35.5 | 56.1 | 79.1 | 14.2 | 1.61 | 57.2 | 13.2 | 0.36 | 2.5 | 3.31 | 2.5 | 5.0 | 4.3 | 5.0 | 191.0 | | | |
| MN91324 | 60.7 | 32.4 | 64.1 | 89.1 | 14.3 | 1.58 | 61.0 | 13.3 | 0.37 | 2.8 | 2.88 | 2.3 | 4.3 | 4.8 | 5.0 | 180.8 | | | |
| SBE0050 | 59.9 | 32.8 | 62.9 | 67.8 | 13.1 | 1.59 | 56.5 | 12.5 | 0.38 | 2.8 | 4.44 | 2.3 | 3.0 | 4.0 | 5.0 | 189.5 | | | |
| MN92387 | 61.1 | 38.1 | 48.5 | 71.0 | 13.9 | 1.53 | 57.9 | 13.4 | 0.32 | 2.0 | 2.81 | 2.0 | 3.5 | 4.3 | 3.8 | 180.8 | | | |
| ND678 | 61.9 | 31.0 | 66.9 | 82.3 | 14.6 | 1.54 | 57.4 | 13.6 | 0.32 | 2.8 | 3.00 | 2.8 | 6.0 | 4.3 | 6.0 | 197.5 | | | |
| ND688 | 60.2 | 33.8 | 67.8 | 84.7 | 13.8 | 1.56 | 59.6 | 12.8 | 0.35 | 2.5 | 3.31 | 2.5 | 4.0 | 4.5 | 5.0 | 188.3 | | | |
| SBF0402 | 61.1 | 36.4 | 51.5 | 72.9 | 14.7 | 1.46 | 62.5 | 13.8 | 0.33 | 3.5 | 4.25 | 2.8 | 3.0 | 4.3 | 5.8 | 194.0 | | | |

**USDA / ARS
WHEAT QUALITY LAB**

FARGO, ND

Table 22(cont)

| VARIETY | TW (lb/bu) | KWT (gr) | SKWCS | | NIR | WHEAT | | FLOUR | | MIX PAT | BAKE ABS | MIX TIME (min) | -----Rating----- | | | | | | LOAF VOL (cc) |
|----------|---------------|-------------|-------------------|---------------|-------------|-------------|-----------------|-------------|-------------|------------|-------------|----------------------|------------------|------------|------------|------------|--------------|---|---------------------|
| | | | HARDNESS INDEX | HARD- NESS | | PRO | ASH (14% mb) | EXT (%) | PRO | | | | ASH (14 % mb) | D | C | C | G | T | |
| | | | | | | | | | | | | | | | | | | | |
| MT9354 | 59.5 | 32.7 | <u>68.1</u> | 79.3 | 14.2 | 1.58 | 57.6 | 13.5 | 0.38 | <u>3.0</u> | 59.7 | 4.38 | 2.5 | 3.3 | 4.0 | <u>5.8</u> | <u>190.3</u> | | |
| MT9360 | 60.9 | 30.2 | <u>61.7</u> | 72.9 | <u>14.9</u> | 1.59 | 57.1 | <u>14.7</u> | 0.36 | <u>3.0</u> | <u>61.0</u> | 3.67 | <u>3.0</u> | 3.0 | <u>4.7</u> | <u>6.0</u> | <u>198.7</u> | | |
| N89-0562 | 61.1 | 34.1 | <u>65.9</u> | 80.0 | <u>14.5</u> | 1.83 | 55.0 | <u>13.8</u> | 0.43 | 1.8 | 59.5 | 3.50 | 2.5 | 3.0 | 3.8 | <u>5.8</u> | <u>189.3</u> | | |
| N92-2031 | <u>62.1</u> | 28.2 | <u>72.6</u> | 84.3 | <u>14.7</u> | 1.64 | 58.2 | <u>14.1</u> | 0.41 | 2.3 | 60.0 | 3.25 | 2.3 | <u>3.8</u> | 3.8 | <u>5.3</u> | <u>182.3</u> | | |
| N92-0248 | 60.6 | 27.9 | 59.5 | 66.1 | 13.9 | <u>1.55</u> | 59.7 | 13.0 | <u>0.34</u> | 1.3 | 56.5 | 2.81 | 2.0 | <u>3.8</u> | 3.8 | <u>5.0</u> | 176.8 | | |
| N92-0434 | 61.2 | <u>36.7</u> | 57.0 | 71.3 | 14.0 | <u>1.53</u> | 55.7 | 13.3 | 0.35 | <u>3.3</u> | 59.6 | 3.69 | <u>3.3</u> | 3.3 | 4.5 | <u>5.5</u> | <u>194.3</u> | | |
| A993-401 | 58.9 | 34.0 | 56.9 | 66.1 | 13.4 | 1.60 | 57.4 | 12.6 | 0.37 | 2.0 | 56.9 | 3.44 | 2.0 | <u>3.8</u> | 3.8 | 4.5 | <u>178.0</u> | | |
| A993-402 | 60.0 | 33.2 | 54.8 | 68.6 | 13.8 | <u>1.53</u> | 59.8 | 12.9 | 0.37 | <u>2.8</u> | 59.9 | 2.75 | 2.3 | 3.3 | 4.0 | 4.5 | 176.5 | | |
| BW173 | 60.1 | 32.4 | 61.0 | 82.0 | <u>15.0</u> | 1.64 | 59.8 | <u>14.4</u> | 0.37 | 2.5 | 59.7 | 3.19 | 2.5 | <u>3.5</u> | 4.5 | <u>5.8</u> | <u>192.3</u> | | |
| BW191 | 59.6 | 34.0 | 54.5 | 81.4 | <u>15.8</u> | 1.69 | 59.4 | <u>14.9</u> | 0.38 | <u>3.0</u> | <u>61.8</u> | 2.75 | <u>2.8</u> | <u>3.8</u> | 3.5 | <u>6.0</u> | <u>200.5</u> | | |
| HY417 | 60.8 | <u>38.0</u> | 48.6 | 61.7 | 12.8 | <u>1.57</u> | 56.9 | 12.1 | 0.35 | 2.3 | 56.3 | 4.25 | 2.5 | <u>4.3</u> | 3.3 | 4.8 | <u>185.3</u> | | |
| MN2535 | <u>62.2</u> | 31.8 | 55.7 | 78.0 | <u>17.7</u> | 1.90 | 52.2 | <u>17.0</u> | 0.37 | 2.5 | <u>61.2</u> | 2.13 | 2.5 | <u>4.5</u> | 3.0 | 4.0 | <u>187.5</u> | | |

DOUGH CHAR (DC):
CRUMB COLOR (CC):
CRUMB GRAIN (CG):
CRUMB TEXTURE (CT):

| RATINGS: | | 0 | 3 | 6 |
|---------------------|--------------|---------|-------------|--------------|
| DOUGH CHAR (DC): | STICKY-WEAK | PLIABLE | ELASTIC | BUCKY |
| CRUMB COLOR (CC): | YELLOW | GREY | DULL | BRIGHT WHITE |
| CRUMB GRAIN (CG): | IRREG, THICK | | OPEN, THICK | FINE |
| CRUMB TEXTURE (CT): | HARSH | | COARSE | SILKY |

1995 Spring Uniform Regional Nursery

USDA / ARS
WHEAT QUALITY LAB

Table 23

REGION: *West*

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | SKWCS | | NIR | WHEAT | | FLOUR | | MIX PAT | BAKE ABS | MIX TIME (min) | D | | | | LOAF VOL (cc) |
|---------|---------------|-------------|----------|-------|---------------|-----------------|-----------------|------------|-----------------|------------|-------------|----------------------|-----|-----|-----|-----|---------------------|
| | | | HARDNESS | INDEX | HARD- NESS | PRO (14% mb) | ASH (14% mb) | EXT (%) | PRO (14% mb) | | | | C | C | C | C | |
| Std | Butte 86 | 61.6 | 34.6 | 72.8 | 81.8 | 12.9 | 1.53 | 62.1 | 11.7 | 0.34 | 1.6 | 3.95 | 1.6 | 2.6 | 5.2 | 3.6 | 158.2 |
| | Marquis | 61.1 | 33.7 | 66.3 | 79.6 | 13.8 | 1.63 | 60.7 | 13.2 | 0.36 | 3.2 | 3.20 | 2.2 | 3.8 | 4.4 | 4.8 | 176.6 |
| | Chris | 60.7 | 30.4 | 67.5 | 81.5 | 14.2 | 1.55 | 62.4 | 13.6 | 0.36 | 2.0 | 3.35 | 2.0 | 3.0 | 4.6 | 4.2 | 178.0 |
| | Era | 60.9 | 30.3 | 69.1 | 76.2 | 12.5 | 1.55 | 57.9 | 11.4 | 0.37 | 1.6 | 4.70 | 1.8 | 3.0 | 4.4 | 3.8 | 175.8 |
| | Stoa | 61.2 | 32.3 | 71.4 | 75.5 | 12.9 | 1.54 | 61.5 | 12.0 | 0.34 | 2.4 | 4.40 | 2.0 | 3.2 | 4.8 | 4.2 | 173.0 |
| | SD3151 | 61.4 | 32.4 | 75.1 | 77.6 | 13.4 | 1.54 | 57.9 | 12.9 | 0.39 | 1.8 | 4.60 | 2.0 | 3.2 | 5.0 | 4.0 | 172.6 |
| | SD3156 | 62.5 | 34.7 | 63.4 | 69.7 | 12.4 | 1.49 | 61.5 | 11.5 | 0.32 | 1.8 | 4.30 | 1.8 | 2.6 | 4.8 | 4.0 | 165.0 |
| | SD3164 | 63.1 | 37.0 | 62.0 | 80.3 | 13.2 | 1.55 | 61.5 | 12.2 | 0.35 | 2.4 | 4.35 | 2.0 | 3.8 | 4.6 | 5.0 | 174.0 |
| | SD8089 | 60.2 | 31.0 | 66.9 | 72.6 | 12.0 | 1.41 | 62.4 | 11.1 | 0.37 | 1.2 | 3.80 | 1.2 | 2.8 | 4.4 | 3.4 | 154.0 |
| | SD8088 | 59.9 | 30.6 | 59.7 | 63.8 | 12.7 | 1.39 | 60.8 | 12.0 | 0.37 | 1.4 | 3.65 | 1.6 | 3.2 | 4.6 | 3.0 | 172.6 |
| | SD3165 | 62.3 | 37.8 | 60.4 | 77.2 | 13.1 | 1.59 | 59.7 | 12.2 | 0.36 | 1.8 | 3.90 | 2.0 | 2.2 | 5.4 | 5.0 | 174.2 |
| | SD3161 | 62.1 | 32.5 | 60.8 | 53.6 | 12.2 | 1.48 | 56.4 | 11.4 | 0.33 | 2.0 | 5.15 | 1.8 | 1.8 | 5.2 | 4.4 | 171.0 |
| | MN91309 | 61.2 | 35.8 | 60.3 | 73.9 | 12.6 | 1.52 | 59.5 | 11.5 | 0.35 | 2.2 | 4.70 | 1.6 | 3.8 | 4.6 | 4.8 | 169.4 |
| | MN91324 | 61.3 | 32.9 | 67.4 | 83.3 | 12.7 | 1.59 | 60.1 | 11.5 | 0.38 | 1.6 | 3.80 | 1.6 | 3.2 | 3.4 | 4.8 | 169.8 |
| | SBE0050 | 60.8 | 32.7 | 64.6 | 68.0 | 11.9 | 1.53 | 54.4 | 11.2 | 0.37 | 2.0 | 5.80 | 2.0 | 3.8 | 5.0 | 3.8 | 169.6 |
| | MN92387 | 62.2 | 36.9 | 56.9 | 71.0 | 13.3 | 1.56 | 57.8 | 12.5 | 0.31 | 1.2 | 3.00 | 1.6 | 2.8 | 3.6 | 4.6 | 170.6 |
| | ND678 | 61.9 | 31.0 | 75.0 | 82.8 | 13.7 | 1.49 | 57.9 | 12.7 | 0.34 | 2.0 | 3.30 | 2.4 | 5.4 | 4.0 | 6.0 | 185.6 |
| | ND688 | 61.4 | 37.6 | 65.4 | 88.5 | 12.7 | 1.49 | 60.4 | 11.3 | 0.36 | 1.6 | 3.90 | 1.4 | 3.0 | 3.6 | 4.8 | 169.8 |
| | SBF0402 | 61.5 | 36.1 | 47.7 | 67.8 | 12.7 | 1.45 | 59.4 | 12.0 | 0.33 | 2.0 | 5.55 | 2.2 | 3.4 | 4.6 | 4.8 | 179.0 |

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USDA / ARS
WHEAT QUALITY LAB

Table 23(cont)

REGION: West

FARGO, ND

| VARIETY | TW | | SKWCS | | NIR | | WHEAT | | FLOUR | | MIX | | BAKE | | MIX | | D | | C | | C | | LOAF | |
|----------|---------|------|----------|------|-------|------|----------|------|----------|-----|-------|------|-------|-----|-------|-----|-------|--|-------|--|-------|--|------|--|
| | (lb/bu) | | HARDNESS | | HARD- | | PRO | | EXT | | PAT | | ABS | | TIME | | C | | C | | C | | VOL | |
| | (gr) | | INDEX | | NESS | | (14% mb) | | (14% mb) | | (min) | | (min) | | (min) | | (min) | | (min) | | (min) | | (cc) | |
| MT9354 | 62.4 | 35.6 | 66.3 | 79.5 | 13.1 | 1.47 | 56.9 | 12.0 | 0.36 | 1.8 | 56.6 | 4.60 | 2.2 | 3.6 | 5.0 | 5.4 | 183.6 | | | | | | | |
| MT9360 | 62.0 | 31.8 | 65.4 | 73.8 | 14.0 | 1.56 | 54.9 | 13.7 | 0.36 | 2.8 | 58.6 | 3.75 | 3.0 | 4.0 | 4.4 | 5.8 | 193.4 | | | | | | | |
| N89-0562 | 62.4 | 38.7 | 63.1 | 77.2 | 14.0 | 1.76 | 54.4 | 12.9 | 0.41 | 1.8 | 59.1 | 3.30 | 2.2 | 2.8 | 4.2 | 5.8 | 183.4 | | | | | | | |
| N92-2031 | 62.7 | 30.1 | 75.5 | 82.3 | 13.9 | 1.55 | 59.9 | 13.3 | 0.37 | 2.4 | 59.4 | 3.15 | 2.2 | 3.2 | 3.2 | 5.6 | 184.2 | | | | | | | |
| N92-0248 | 61.9 | 29.2 | 65.3 | 71.3 | 13.3 | 1.56 | 60.8 | 12.2 | 0.31 | 1.6 | 57.7 | 2.85 | 2.0 | 3.4 | 4.0 | 5.8 | 180.6 | | | | | | | |
| N92-0434 | 61.5 | 36.9 | 61.7 | 75.0 | 13.3 | 1.57 | 57.6 | 12.6 | 0.34 | 3.0 | 59.8 | 3.50 | 2.6 | 3.4 | 3.6 | 5.6 | 189.0 | | | | | | | |
| A993-401 | 60.1 | 35.3 | 61.4 | 69.2 | 12.3 | 1.53 | 56.9 | 11.5 | 0.36 | 1.6 | 57.0 | 3.70 | 1.8 | 3.0 | 4.2 | 3.8 | 172.2 | | | | | | | |
| A993-402 | 60.2 | 33.8 | 57.2 | 70.0 | 12.4 | 1.58 | 57.6 | 11.4 | 0.36 | 2.0 | 58.5 | 3.20 | 1.6 | 4.0 | 3.4 | 3.8 | 167.4 | | | | | | | |
| BW173 | 61.9 | 34.9 | 64.0 | 88.7 | 13.8 | 1.51 | 59.6 | 13.0 | 0.34 | 2.0 | 58.8 | 3.17 | 2.0 | 2.3 | 5.3 | 5.7 | 179.0 | | | | | | | |
| BW191 | 60.6 | 34.6 | 62.6 | 82.2 | 14.1 | 1.62 | 58.4 | 13.2 | 0.38 | 2.6 | 60.6 | 3.25 | 2.2 | 3.4 | 3.6 | 5.6 | 184.4 | | | | | | | |
| HY417 | 62.5 | 38.8 | 57.0 | 63.2 | 11.2 | 1.48 | 57.7 | 10.4 | 0.32 | 1.8 | 58.3 | 4.85 | 1.8 | 4.2 | 3.8 | 3.8 | 170.4 | | | | | | | |
| MN2535 | 62.3 | 37.1 | 62.8 | 94.4 | 14.6 | 1.80 | 53.8 | 13.2 | 0.46 | 2.0 | 59.7 | 2.63 | 2.0 | 2.0 | 4.5 | 5.5 | 171.0 | | | | | | | |

RATINGS:

| | | | | |
|---------------------|--------------|---------|-------------|--------------|
| DOUGH CHAR (DC): | STICKY-WEAK | PLIABLE | ELASTIC | BUCKY |
| CRUMB COLOR (CC): | YELLOW | GREY | DULL | BRIGHT WHITE |
| CRUMB GRAIN (CG): | IRREG, THICK | | OPEN, THICK | FINE |
| CRUMB TEXTURE (CT): | HARSH | | COARSE | SILKY |

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Table 24

LOCATION: Dickinson, ND
NURSERY: Field Plots

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | | NIR HARD- NESS | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C C | C G | C T | LOAF VOL (cc) | |
|----------|---------------|-------------|-----------|-----------|----------------|----|----|----|----------------------|-------|------|-----------------|------------|-------|-----------------|------------|------------|-------------|----------------------|--------|--------|--------|--------|---------------------|-----|
| | | | | | A | B | C | D | | INDEX | PRO | ASH (14% mb) | EXT (%) | PRO | ASH (14% mb) | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| Grandin | 59.4 | 32.7 | 59 | 2 | 0 | 3 | 17 | 80 | 71.6 | 79 | 14.4 | 1.67 | 56.8 | 13.6 | 0.38 | 59.0 | 3 | 56.2 | 5.00 | 3 | 5 | 4 | 6 | 6 | 203 |
| 2375 | 59.0 | 32.4 | 38 | 4 | 2 | 7 | 26 | 65 | 65.2 | 80 | 13.5 | 1.54 | 54.6 | 12.9 | 0.36 | 56.2 | 2 | 56.2 | 4.00 | 2 | 3 | 3 | 6 | 6 | 192 |
| Trenton | 60.6 | 34.2 | 62 | 2 | 1 | 4 | 21 | 74 | 68.3 | 78 | 14.3 | 1.50 | 57.5 | 13.8 | 0.35 | 60.8 | 3 | 58.8 | 4.25 | 3 | 3 | 6 | 6 | 6 | 207 |
| Stoa | 57.8 | 29.4 | 32 | 4 | 0 | 5 | 14 | 81 | 70.5 | 76 | 13.8 | 1.70 | 55.8 | 13.2 | 0.35 | 59.6 | 3 | 56.4 | 4.50 | 3 | 5 | 4 | 6 | 6 | 200 |
| Butte 86 | 60.6 | 35.2 | 58 | 2 | 2 | 11 | 33 | 54 | 60.3 | 82 | 14.1 | 1.59 | 60.8 | 13.2 | 0.33 | 59.6 | 2 | 56.4 | 3.00 | 2 | 3 | 3 | 6 | 6 | 183 |
| CDC Teal | 59.0 | 31.4 | 46 | 4 | 2 | 11 | 23 | 64 | 64.6 | 80 | 14.5 | 1.54 | 58.7 | 14.1 | 0.34 | 58.6 | 3 | 56.4 | 4.00 | 3 | 3 | 5 | 6 | 6 | 213 |
| Glupro | 55.8 | 29.5 | 19 | 6 | 2 | 13 | 28 | 57 | 63.0 | 88 | 16.6 | 1.64 | 62.5 | 16.0 | 0.41 | 61.1 | 4 | 56.4 | 4.50 | 3 | 3 | 3 | 6 | 6 | 203 |
| Norm | 58.1 | 33.7 | 59 | 3 | 3 | 12 | 23 | 62 | 63.3 | 73 | 13.3 | 1.67 | 55.3 | 12.8 | 0.37 | 57.9 | 3 | 53.9 | 4.50 | 2 | 3 | 3 | 6 | 6 | 187 |
| Kulm | 61.2 | 33.2 | 50 | 3 | 5 | 16 | 40 | 39 | 54.9 | 74 | 14.3 | 1.52 | 56.3 | 14.0 | 0.33 | 60.8 | 3 | 58.8 | 3.75 | 3 | 5 | 4 | 6 | 6 | 195 |
| Earnest | 60.1 | 31.6 | 43 | 3 | 6 | 12 | 35 | 47 | 58.0 | 69 | 13.8 | 1.64 | 56.5 | 13.3 | 0.36 | 59.6 | 3 | 55.7 | 4.00 | 3 | 5 | 4 | 6 | 6 | 202 |
| Len | 56.6 | 29.5 | 34 | 4 | 1 | 5 | 20 | 74 | 67.8 | 78 | 14.6 | 1.86 | 53.4 | 13.6 | 0.40 | 60.0 | 4 | 57.5 | 5.00 | 3 | 4 | 4 | 6 | 6 | 204 |

DISTRIBUTION: A= % Soft

B= % Seml-Soft

C= % Seml-Hard

D= % Hard

| RATINGS: | | 0 | | 3 | | 6 | |
|---------------------|--|--------------|---------|-------------|--------|--------------|--|
| | | STICKY-WEAK | PLIABLE | ELASTIC | CREAMY | BUCKY | |
| DOUGH CHAR (DC): | | YELLOW | GREY | DULL | CREAMY | BRIGHT WHITE | |
| CRUMB COLOR (CC): | | IRREG, THICK | | OPEN, THICK | | FINE | |
| CRUMB GRAIN (CG): | | HARSH | | COARSE | | SILKY | |
| CRUMB TEXTURE (CT): | | | | | | | |

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WHEAT QUALITY LAB
FARGO, ND

Table 25

LOCATION: Langdon, ND
NURSERY: Field Plots

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | NIR | | WHEAT | | FLOUR | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | D C | C C | C G | C T | LOAF VOL (cc) |
|----------|---------------|-------------|-----------|-----------|----------------|----|----|-----|-------|---------------|-----------------|-----------------|------------|-----------------|-----------------|------------|------------|-------------|----------------------|--------|--------|--------|--------|---------------------|
| | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | A | B | C | D | INDEX | HARD- NESS | PRO (14% mb) | ASH (14% mb) | EXT (%) | PRO (14% mb) | ASH (14% mb) | | | | | | | | | |
| Grandin | 54.3 | 29.2 | 50 | 1 | 3 | 6 | 25 | 66 | 67.1 | 67 | 17.1 | 2.29 | 58.7 | 15.9 | 0.47 | 61.1 | 4 | 61.1 | 3.75 | 3 | 4 | 6 | 6 | 214 |
| 2375 | 55.8 | 29.1 | 29 | 4 | 3 | 10 | 35 | 52 | 63.3 | 73 | 14.9 | 1.90 | 59.3 | 13.7 | 0.41 | 57.3 | 2 | 57.3 | 3.25 | 3 | 3 | 6 | 6 | 209 |
| Trenton | 54.9 | 29.7 | 36 | 2 | 3 | 8 | 29 | 60 | 62.8 | 77 | 16.2 | 1.94 | 55.7 | 15.1 | 0.47 | 60.5 | 4 | 60.5 | 4.50 | 3 | 3 | 5 | 6 | 223 |
| Stoa | 53.0 | 25.7 | 14 | 5 | 2 | 2 | 20 | 76 | 67.0 | 74 | 15.8 | 2.26 | 55.2 | 15.0 | 0.42 | 59.3 | 4 | 59.3 | 4.50 | 3 | 3 | 5 | 6 | 220 |
| Butte 86 | 53.4 | 30.6 | 39 | 2 | 7 | 11 | 31 | 51 | 62.3 | 81 | 17.1 | 1.91 | 54.8 | 15.8 | 0.44 | 60.3 | 2 | 60.3 | 3.00 | 2 | 3 | 3 | 6 | 218 |
| CDC Teal | 55.5 | 29.1 | 43 | 3 | 5 | 14 | 32 | 49 | 58.9 | 79 | 16.1 | 1.72 | 59.7 | 15.4 | 0.41 | 61.1 | 3 | 61.1 | 2.75 | 3 | 3 | 5 | 6 | 230 |
| Glupro | 53.5 | 30.2 | 28 | 3 | 1 | 8 | 22 | 69 | 76.6 | 81 | 18.5 | 2.10 | 60.5 | 17.6 | 0.52 | 66.8 | 4 | 63.9 | 3.50 | 3 | 3 | 5 | 6 | 225 |
| Norm | 50.7 | 26.7 | 14 | 6 | 6 | 20 | 43 | 31 | 53.8 | 50 | 13.6 | 1.76 | 47.4 | 12.9 | 0.47 | 59.6 | 3 | 59.6 | 3.50 | 2 | 4 | 6 | 6 | 222 |
| Kulm | 55.5 | 29.1 | 40 | 3 | 6 | 19 | 35 | 40 | 56.5 | 71 | 17.2 | 1.93 | 49.5 | 16.2 | 0.41 | 62.7 | 5 | 62.7 | 3.25 | 3 | 3 | 6 | 6 | 246 |

DISTRIBUTION: A = % Soft

B = % Semi-Soft

C = % Semi-Hard

D = % Hard

| RATINGS: | 0 | | | 3 | | | 6 | | |
|---------------------|--------------|--|--|--------------|--|--|---------|--|--|
| | STICKY-WEAK | | | PLIABLE | | | ELASTIC | | |
| | YELLOW | | | GREY | | | DULL | | |
| | IRREG, THICK | | | OPEN, THICK | | | COARSE | | |
| DOUGH CLAR (DC): | | | | | | | | | |
| CRUMB COLOR (CC): | | | | | | | | | |
| CRUMB GRAIN (CG): | | | | | | | | | |
| CRUMB TEXTURE (CT): | | | | | | | | | |
| | BUCKY | | | BRIGHT WHITE | | | FINE | | |
| | | | | | | | SILKY | | |

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Table 26

LOCATION: Minot, ND
NURSERY: Field Plots

FARGO, ND

| VARIETY | TW (lb/bu) | KWT (gr) | LG (%) | SM (%) | SKWCS HARDNESS | | | NIR HARD- NESS | WHEAT | | FLOUR | | MIX ABS | MIX PAT | BAKE ABS | MIX TIME (min) | -----Rating----- | | | | | | LOAF VOL (cc) | |
|---------|---------------|-------------|-----------|-----------|----------------|---|----|----------------------|-------|-----------------|------------|------|------------|------------|-------------|----------------------|------------------|------|------|---|---|---|---------------------|-----|
| | | | | | DISTRIBUTION | | | | PRO | ASH (14% mb) | EXT (%) | PRO | | | | | ASH (14 % mb) | D | C | C | G | T | | |
| | | | | | A | B | C | | | | | | | | | | | | | | | | | D |
| Grandin | 60.5 | 32.5 | 62 | 1 | 1 | 0 | 8 | 91 | 87.4 | 75 | 15.4 | 1.82 | 63.2 | 14.8 | 0.72 | 63.1 | 4 | 61.5 | 3 | 3 | 5 | 6 | 193 | |
| 2375 | 55.8 | 32.5 | 43 | 5 | 0 | 2 | 11 | 87 | 105.1 | 67 | 16.0 | 1.75 | 62.2 | 14.9 | 0.49 | 61.1 | 2 | 61.1 | 2 | 4 | 4 | 6 | 207 | |
| Trenton | 55.7 | 26.0 | 13 | 8 | 2 | 2 | 7 | 89 | 101.9 | 64 | 16.6 | 1.66 | 59.9 | 15.5 | 0.40 | 62.7 | 4 | 62.7 | 4.00 | 3 | 3 | 3 | 6 | 213 |

DISTRIBUTION: A= % Soft

B= % Semi-Soft

C= % Semi-Hard

D= % Hard

RATINGS:

DOUGH CHIAI (DC):

CRUMB COLOR (CC):

CRUMB GRAIN (CG):

CRUMB TEXTURE (CT):

0

STICKY-WEAK

YELLOW

IRREG, THICK

HARSH

3

ELASTIC

DULL

OPEN, THICK

COARSE

6

BUCKY

BRIGHT WHITE

FINE

SILKY

